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ABSTRACT

This paper documents the achievement monitoring component of a three-year study on the acquisition of addition-subtraction problem-solving skills by young children. A set of performance objectives contained in or ancillary to ten instructional units on sentence-writing for verbal problems and algorithms specified test content. Tests measuring group progress toward these objectives were administered after each unit. Data for the tests given after the two units covered in the spring semester of grade 2 (n=120) are described. This paper presents (1) background information on the subjects and instructional materials, (2) a description of the three-year achievement monitoring plan and the tests, (3) a report of the data collection procedures, and (4) a discussion of the results. Samples of the tests, administrator's manuals, and complete item and test statistics appear in the appendices. (PN)

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DATA COLLECTION PROCEDURES AND DESCRIPTIVE STATISTICS FOR THE GRADE TWO (SPRING) ACHIEVEMENT MONITORING TESTS

(A-1 AND A-2), COORDINATED STUDY NO. 1

bу

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Abstract

This paper is the third in a series of four reports that document the achievement monitoring component of a three-year study on the acquisition of addition-subtraction problem-solving skills by young children. A set of performance objectives contained in or aucillary to ten instructional units on sentence-writing for verbal problems and algorithms specified test content. Tests measuring group progress toward these objectives were administered after each unit. Data for the tests given after the two units covered in the spring semester of grade 2 are presented in this paper. The scores for each objective, developed using matrix sampling procedures, indicated mastery of addition without regrouping, near-mastery of subtraction without regrouping, and substantial progress on the addition algorithm for numbers 0-99. These results reflected the instructional emphasis. No progress was made on the subtraction algorithm for numbers 0-99 for which no instruction occurred. There was, marked improvement on several of the problem-solving 0-99 and sentence-writing 0-99 objectives not previously mastered and on certain algorithm 0-999 objectives as well. However, none of these objectives were actually mastered. Although for the most part existing mastery of the various objectives associated with the numbers 0-20 was maintained, there was a tendency toward a slight decline for those not previously mastered.

Introduction

The Mathematics Work Group of the Wisconsin Center for Education Research is presently conducting a program of research focused on children's
acquisition of concepts and skills related to addition and subtraction of
whole numbers. A major aim of mathematical instruction is to enable
students to acquire concepts and skills requisite for solving problems of
many types. A goal of our current research is to understand how pedagogical and psychological factors are related to their acquisition.

The interrelationship of pupil performance on selected arithmetic skills, pupil cognitive processes, instructional materials, and teachers classroom behaviors is depicted in Figure 1. Using this framework, we are proceeding to:

- identify important addition and subtraction skills;
- 2. review past empirical data or collect new data on these skills:
- 3. re-examine these mathematical skills and hypothesize how they are related to underlying cognitive skills;
- 4. examine the instructional materials designed to teach these skills; and
- of particular teacher classroom behaviors, the appropriateness of instructional materials, and the relationship of specific cognitive skills to mathematical skills.

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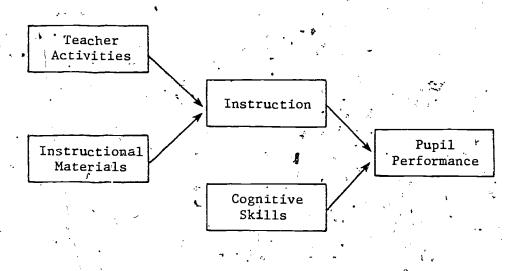


Figure 1. Factors influencing pupil performance.

The work of the Mathematics Work Group is built around the conceptual framework exemplified in Figure 1. The empirical and theoretical investigations generally involve two or more of the factors depicted and have been organized into four major categories. These are a conceptual paper series, a set of short empirical studies, a major longitudinal study, and an invitational conference of scholars.

This paper is one of a series of summary reports from the longitudinal study. Approximately 180 students in three schools were identified as subjects for the study. One school with about 60 students chose not to continue into the second year of the study. Thus, about 120 children were followed for three school years. Pupil performance was measured in s veral ways:

- 1. Individual interviews. At several times during each school year, individual children were administered a set of problem tasks dealing with addition and subtraction. The interviewer attempted to ascertain the children's solution strategy, correctness of answer, type of errors made, and modeling procedures.
- 2. Group-administered paper-and-pencil tests. There were two ...ategories of tests:
 - progress toward a set of performance objectives contained in the instructional materials. By means of matrix sampling procedures, estimates were made of group performance. Achievement monitoring tests were

- given shortly after the completion of the instructional units related to arithmetic objectives.
- b. Topic inventories. These were very short tests that measured pupil progress toward mastery of the objectives of a specific instructional unit or topic. Every subject took the same test, resulting in a measure of individual performance.

Each topic inventory was given only once, providing a measure of performance on a few objectives at a single point in time; in contrast, there were repeated administrations of the same achievement monitoring test, in order to examine change in performance over time on a broad set of objectives.

Instruction and classroom environment were assessed by direct classroom observation of teacher actions, pupil behaviors, and instructional
materials. A trained observer was present each day the instructional
units, or topics, dealing with arithmetic objectives were used. Organizational and grouping measures were noted, along with interactions between
teacher and pupils and among pupils. Measures of pupil engaged time were
estimated by observing six target students.

The purpose of this paper is to report the administration of and results for the achievement monitoring tests given to grade 2 students during the spring semester of the second year of the study in the period March 1980 through May 1980. The tests were administered following instruction in the two algorithm topics (A-1 and A-2). The paper has four major sections: background information on the subjects and instructional materials, description of the three-year achievement monitoring plan and the tests, report of

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the data collection procedures, and discussion of the results. Samples of the tests, administrator's manuals, and complete item and test statistics appear in the appendices.

Background Information

Subjects

The subjects were 120 second-grade students in six classes from two elementary schools in predominantly middle class areas.

Curriculum Materials and Instructional Objectives

Each of the schools used as their mathematics curriculum the Developing Mathematical Processes (DMP) program (Romberg, Harvey, Moser, & Montgomery, 1974). Ten new instructional topics on addition-subtraction, to be integrated into the regular DMP sequence of topics, had been developed for the three-year study. The topics covered during grade 1 (S-1, S-2, and S-3) were sentence-writing topics; three more sentence-writing topics (S-4, S-5, and S-6) which further developed the same objectives were completed in the fall semester of grade 2. For the spring semester of grade 2 and first months of grade 3, four algorithm topics (A-1 through A-4) were taught. Instruction in other DMP topics was carried out as usual in all three grades, except for topics replaced by the ten special topics.

The ultimate goal of the ten topics was that children develop efficient problem-solving behavior in addition and subtraction problem situations. The specific goals believed to result in this behavior are the



ability to symbolize verbal problems in the form of written addition or subtraction sentences and the ability to retrieve addition and subtraction "facts" and/or use addition-subtraction algorithms.

The content of the four algorithm topics, the first two of which were taught in the spring semester of grade 2, is summarized here:

Topic A-1. This topic introduced addition and subtraction of two-digit numbers with computation that involved no regrouping or renaming. The types of verbal problems covered in the six sentence-writing topics (joining, separating, and comparison) were presented again using two-digit numbers (see Buchanan & Romberg, 1982a). The problems were again analyzed using the part-part-whole chart, and horizontal and vertical sentences which represented the problems were written and solved. Computation with two-digit numbers not associated with verbal problems was also practiced.

Topic A-2. Two-digit addition problems requiring regrouping were introduced, including problems with a two-digit and a one-digit number. The addition algorithm was practiced both with problems arising from verbal situations and in isolation. Two-digit subtraction without regrouping was reviewed.

Topic A-3. Two-digit subtraction problems requiring regrouping were introduced and practiced both with and without a verbal problem context. Problems containing a two-digit and a one-digit number were also included. The inverse relationship between addition and subtraction was covered and the addition algorithm was practiced.

<u>Topic A-4</u>. The content of the preceding topics was reviewed. Problems with three addends were introduced.

The skills covered in these four topics were expressed formally by the following instructional objectives common to all:

- 1. Given an open addition or subtraction situation involving the numbers 0-99, writes a sentence that represents the situation.
- 2. Given two numbers whose sum is 0-99, computes their sum.
- 3. Given two numbers 0-99, computes their difference.

Of the many objectives included in the regular DMP topics taught in the grade 2 spring semester, only those which developed the notions of numerousness, ordering, and place value for the numbers 0-99 were essential in terms of the present study, since this content was prerequisite to the objectives of the algorithm topics. These prerequisite objectives were:

- 1. Given a set of 0-99 objects (or the spoken number), represents the numerousness of that set by writing the appropriate number.
- 2. Given a number 0-99, represents it physically or pictorially.
- 3. Given a set of numbers 0-99, orders them.
- 4. Given a number 0-99 writen in compact/expanded notation, writes

 it in expanded/compact notation.

Instruction

Instruction in the algorithm topics A-1 and A-2 occurred in the period from February 1980 to May 1980 for all classes except the lowest achievement group in school 1 which did not complete A-2 until the fall semester of grade 3. The topic pertaining to numerousness, ordering, and place value for the numbers 0-99 was completed just before A-1. The

teachers cooperated with the request that the two A topics be taught according to the specifications in the instructional materials.

The mathematics classes were homogeneously grouped at school 1 into four levels. The two classes in school 3 were heterogeneously/grouped.

(School 2 did not participate in the study after the first year.)

The time allowed for mathematics was:

school 1, four classes 35-minute periods daily

school 3, two classes 45-minute periods daily

It had been suggested that each topic be covered in about three weeks.

The actual range of time spent by five of the six classes appears in

Table 1 and indicates that most classes spent about the recommended time.

Data for the school 1 low achievement class are not included in the table since the class did not finish A-2 in grade 2. It completed about one-half of the topic, spending 268 minutes in 3 days. Since there was much variability among classes in the amount of time per topic, interesting relationships to achievement might be demonstrated. However, no attempt to do so will be made in this report which is concerned with performance of the total population.

Achievement Monitoring Plan and Tests

Overview of the Three-Year Plan

Figure 2 presents an overview of the achievement monitoring plan for the three years of the study. All objectives on which performance was assessed are listed in abbreviated form with an indication of the points in time when instruction occurred, when mastery was expected, and when

Table 1

Time Spent on Instruction in Algorithm ${\tt Topics}^a$

Topic	Minimum	Average	Maximum
A-1	461 min., 15 days	557 min., 17.2 days	640 min., 19 days
A-2	462 min., 13 days	501 min., 15.4 days	541 min., 18 days
_	•	•	

 $a_{\rm The}$ table does not include data for one class which did not finish A-2.

Minutes and days do not necessarily represent the same class.

	·						١			· · · ·
	eline Topic S-1 178 Feb. 179	, Topic S-2 March 179	Topic 5-3 May 179	Test Pates Topic 5-4 Oct. 79	Topic 3-5 Dec. 79	Taple S-6 Peb. '80	Topic A-1 March '80	Topic A-2 May 180	Topic A-3 Oct. /80	Tepic A-4 Nov. 80
Prezegutet Instructional Objectiv	ves .		•					1 .	,	•
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Problem-Solving 0-20			••	, 5			ı	74.0	•	• •
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Counting 9-31 on back			· · · · · · · · · · · · · · · · · · ·			* * * * * * * * * * * * * * * * * * *	, . •			,
basic Facts-Specied Test add 0-239 subt 0-209 Algorithm -Timed Test		1	,						35	
ERIC e 2. Overvi	ew of Achieveme	nt Monitor	ing Plan.	· ·		•••••		,	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	•

achievement was monitored. The schedule called for 11 test times: the baseline test and a test after each instructional topic.

Following the general rule that objectives should be assessed both prior to and following instruction, yet avoiding test situations which would be overly frustrating or extremely easy for the students, four overlapping test periods were identified and objectives added to or dropped from the achievement monitoring schedule accordingly. The four test periods covered the middle of grade 1 to the end of grade 1 (baseline through S-3), the middle of grade 1 to the middle of grade 2 (baseline through S-6), the beginning of grade 2 to the middle of grade 3 (S-4 through A-4), and the middle of grade 1 to the middle of grade 3 (S-1 through A-4). Achievement was assessed a minimum of four times and a maximum of 11 times per objective.

In order to limit the time any student spent in a testing situation and yet to gather a maximum amount of information about progress toward each objective, a matrix sampling plan based on earlier work in this area was followed (Romberg & Braswell, 1973). All students in each class were assigned randomly, to one of three test groups. Each test group was then assigned one of three test forms for each administration period. Each objective was represented by items on at least two and usually all three of the test forms. A description of the tests is given in the following section.

The objectives included in the achievement monitoring program were classified as (1) prerequisite instructional objectives, which were those considered necessary for achievement of the objectives of the S and



A topics, (2) instructional objectives for the S and A topics, and (3) non-instructional objectives. The noninstructional objectives pertained to skills which were not formally taught in the regular DMP program or the S and A topics. However, since there was potentially a relationship between growth in these skills and progress on the formal instructional objectives, they were included in the test program. The noninstructional skills were:

- 1. problem-solving 0-20 and 0-99
- 2. counting on and counting back
- recall of basic addition-subtraction facts under a speeded test condition
- 4. use of addition-subtraction algorithms under a timed test ζ condition

The problem-solving objectives were created for achievement monitoring because the instructional objectives stated for the S and A topics specified sentence-writing skills and open sentence/algorithmic skills as discrete objectives but did not actually express in another objective the ability to integrate these skills in problem-solving situations. Assessment of problem-solving per se was also of interest because these data paralleled that gathered in the individual interview component of the study.

The objectives were also organized in terms of general mathematical content areas such as numerousness, ordering, and open sentences. (See Figure 2.) Each of these areas represented what may be thought of as a composite objective. For example, in the area of numerousness, there

was an individual objective related to writing 0-99 and another objective for representing 0-99; when these two objectives were treated as one, they formed a composite objective called numerousness. The composite objectives will be used in later analyses in which aggregate data are desirable to reduce the number of variables. In the present paper, the discussion primarily concerns individual objectives.

The sentence-writing objectives were stated as composite objectives in the instructional materials; that is, there was no explicit breakdown into individual objectives for each problem type, such as joining, separating and comparison. For two reasons, the sentence-writing objectives were broken down into several discrete objectives, each reflecting a different problem situation: first, the various problem situations were introduced at different points in the sequence of sentence-writing topics; second, and more importantly, the achievement monitoring data will eventually be integrated with data from the interview component of the study which was gathered and analyzed in terms of problem type.

Objectives Assessed in Grade 2 (Spring)

The prerequisite instructional objectives and the instructional objectives for the A topics included in the test program for grade 2 (spring) were stated in full in the first section. The sentence-writing objective for the S topics was also assessed, though the two open sentence objectives for these topics were dropped after S-6. Instruction for these three objectives had been completed at S-6 and the open sentence objectives had been mastered; however, three of the six verbal problem types (subt-

part part whole-addend, comparison, and subt-join-addend) for sentence-writing with numbers 0-20 had not been mastered (see Buchanan & Romberg, 1982a). The sentence-writing objective is:

Given an open problem situation involving the numbers 0-20 that is solvable by using either addition or subtraction, writes a sentence that represents the situation.

The noninstructional skills for problem-solving, recall of basic facts under a speeded test condition, and use of addition and subtraction algorithms under a free response timed condition were assessed throughout this phase of the achievement monitoring. Counting was not assessed after S-6. The 34 individual objectives assessed in grade 2 (spring) are marked with an asterisk in Figure 2 and are summarized in Table 2.

Mastery expectations were established for the prerequisite and S and A instructional objectives. The numerousness, ordering, and place value objectives for the numbers 0-99 were to be mastered just before the first A topic; that is, mastery was expected at the A-l test time. Mastery of the sentence-writing objectives for numbers 0-20 had been anticipated after the completion of S-6 as explained above. It was anticipated that the three instructional objectives for addition and subtraction algorithms and sentence-writing for numbers 0-99 would be mastered upon completion of A-4.



After the original specification of noninstructional objectives, it was decided to add 3-digit numbers (objectives) to the algorithm timed subtests and also to subdivide the timed test objectives according to criteria such as whether or not regrouping was required; therefore, the final number of objectives was > 34.

Table 2

Objectives Assessed in Grade 2 (Spring)

Numerousness writes 0-99 represents 0-99

Ordering, Place Value ordering 0-99 notation 0-99

Sentence-writing 0-20
add-simple joining
subt-simple separating
subt-part part whole-addend
add-part part whole
subt-comparison
subt-join-addend

Sentence-writing 0-99
add-simple joining
subt-simple separating
subt-part part whole-addend
add-part part whole
subt-comparison
subt-join-addend

Problem-solving 0-20
add-simple joining
subt-simple separating
subt-part part whole-addend
add-part-part-whole
subt-comparison
subt-join-addend

Problem-solving 0-99'
add-simple joining
subt-simple separating
subt-part part whole-addend
add-part part whole
subt-comparison
subt-join-addend

Algorithms add 0-99 subt 0-99

Basic Facts Recall--Speeded Tests add 0-20 subt 0-20

Algorithms--Timed Test^a add 0-99 subt 0-99

See footnote 1 on page 13.

There were no specific predictions for time of mastery for the non-instructional objectives; however, it was anticipated that performance on the recall and problem-solving skills for numbers 0-20 would be related to growth on the open sentence and sentence-writing 0-20 objectives.

Similarly, it was presumed that problem-solving skills for numbers 0-99 and algorithmic performance under timed conditions would be related to status on the regular objectives of the A topics.

Description of the Tests

Three forms (U, V, W) of a 40-minute paper-and-pencil test were developed for the spring semester of grade 2 (and fall semester of grade 3); each form had six subtests. The major subtest contained 14 multiple-choice items covering all objectives to be assessed except for facts recall (speeded) and algorithms (timed). The second subtest measured performance on the sentence-writing 0-20 and 0-99 objectives in a free-response context. (These objectives were also included in the multiple-choice test.). Two subtests assessed recall of addition and subtraction facts under speeded test conditions. The final two subtests assessed addition and subtraction algorithm-proficiency under timed conditions. Copies of the tests and administrator's manuals are in Appendix A; a discussion of the test development for all three years of the study appears elsewhere (Buchanan & Romberg, 1982b).

Multiple-choice subtest An outline of the content of each form of the multiple-choice subtest appears in Table 3. Each objective in the areas of numerousness, ordering/place value, and algorithms (not timed) was represented by one multiple-choice item on every test form; i.e., three items altogether per objective.

Table 3
Outline of Multiple-choice Subtest Items

Item ID ^a	Form U	Form V	Form W
10 .	Numerousness writes 0-99	Numerousness writes 0-99	Numerousness writes 0-99
2D	Numerousness represents 0-99	Numerousness represents 0-99	Numerousness represents 0-99 .
3E	Problem-solving 0-20 (A) subt-simple separating 11-15	Problem-solving 0-20 (A) subt-comparison 11-15	Problem-solving 0-20 (A) add-part part whole 11-15
4F	Problem-solving 0-99 (A) subt-comparison 0-99	Problem-solving 0-99 (A) add-part part whole 0-99	Problem-solving 0-99 (A) subt-simple separating 0-99
50	Problem-solving 0-20 (B) subt-join-addend 11-15	Problem-solving 0-20 (B) subt-part part whole-addend 11-15	Problem-solving 0-20 (B) add-simple joining 11-15
·6H	Problem-solving 0-99 (B) add-simple joining 0-99	Problem solving 0-99 (B) subt-join-addend 0-99	Problem-solving 0-99 (B) subt-part part whole-addend 0-99
71	Ordering, Place Value ordering 0-99	Ordering, Place Value ordering 0-99	Ordering, Place Value ordering 0-99
8J	Ordering, Place Value notation 0-99	Ordering, Place Value notation 0-99	Ordering, Place Value notation 0-99
9К	Sentence-writing 0-20 (A) add-part part whole 11-15	Sentence-writing 0-20 (A) subt-simple separating 11-15	Sentence-writing 0-20 (A) subt-comparison 11-15
10L	Sentence-writing 0-99 (A) subt-simple separating 0-99	Sentence-writing 0-99 (A) subt-comparison 0-99	Sentence-writing 0-99 (A) add-part part whole 0-99
11.M	Sentence-writing 0-20 (B) subt-join-addend 11-15	Sentence-writing 0-20 (B) ^subt-part part whole-addend 11-15	Sentence-writing 0-20 (B) add-simple joining 11-15

continued

27

Table 3 (continued)

Item ID ^a	Form U	Form V .	Form W	1
12N	Sentence-writing 0-99 (B) subt-part part whole-addend 0-99	Sentence-writing 0-99 (B) add-simple joining 0-99	Sentence-writing 0-99 (subt-join-addend 0-99	(B) ´
130	Algorithms add 0-99	Algorithms add 0-99	Algorithms add 0-99	
14P	Algorithms subt 0-99	Algorithms subt 0-99	Algorithms subt 0-99	

The numeric ID refers to the items as they are labeled in the computer printout reproduced in Appendix B. The alpha ID refers to the actual tests; items A and B are samples (see Appendix A).

Each of the 12 individual objectives for sentence-writing 0-20 and 0-99 was represented by a multiple-choice item in one of three forms; that is, one item per objective. Each verbal problem type (e.g., joining) was therefore represented by two items, one for numbers 11-15 and one for 0-99. The two items were on different forms.

The sentence-writing objectives (or items) were further classified into two groups: Sets A and B. This was an arbitrary division created because half (Set A) of the items were designed to reflect the interview verbal problems precisely in syntax, number order, number domain, etc., while the remainder (Set B) allowed variations in these characteristics in keeping with the instructional program which presented more variations of each problem type than it was possible to cover in the individual interview. 2

Since there was no way in a multiple-choice format to have students actually write a sentence, the items required listening to a verbal problem read aloud and then choosing the sentence which correctly represented the verbal situation. The problem situation itself was not printed on the test page. This prevented reading difficulties and also was in keeping with the procedures for the interviews in which the problems were presented orally. Another subtest, explained below, contained sentence-writing items in a free-response format.

The assignment of items to test forms for the 12 objectives for problem-solving 0-20 and 0-99 exactly paralleled the assignment of

For both the sentence-writing and problem-solving objectives, Set A test verbal problems differed from interview verbal problems in that different nouns and verbs were used so that the students had a new context to consider.



sentence-writing items. That is, there was one item per objective assigned to one of the three forms. The two items total per verbal problem type-one for 0-20 and one for 0-99-were assigned to different forms. The problem-solving items, which were also in Set A or B, required the student to listen to the story, which was not printed in the test booklet, and to choose the correct solution.

All of the questions in the multiple-choice section of the tests were read to the children and then the key phrases were repeated; in the case of the verbal problems for the sentence-writing and problem-solving objectives, the entire story situation was read twice. The children then marked an X on one of the four response choices; the solution, two distractors, and the "puzzled face," an option which indicated "I have not learned this yet." The response choices, symbols, and pictures were not read or explained to the children (except for the "puzzled face").

The "puzzled face" option was provided to avoid unnecessary frustration and to reduce the amount of random guessing. Although it was expected that the "puzzled face" choice would be used throughout the achievement testing because there would always be objectibes not yet introduced and/or mastered, this option was particularly useful for baseline assessment such as for algorithms. Marking the "puzzled face" allowed children to give a positive response indicating that they hadn't learned to find the answer to the question.

Sentence-writing free-response subtests. The 12 individual sentence-writing objectives (verbal problem types) for the numbers 0-20 and 0-99 were also assessed in a free-response format in which a verbal problem was

read twice to the students who were directed to write a sentence for the situation and not solve the sentence. There were two 0-20 and two 0-99 items per form. All items were im Set A (see Table 4).

Speeded subtests. There were 12 addition and 12 subtraction facts on each of the three forms; the first six problems in each case covered the facts from 4 to 9; the last six involved 10 to 18 (see Table 5).

The addition and subtraction recall subtests were introduced by the test administrator; then specific directions on a tape recording preceded the items presented with intervals of 2 seconds' working time for both addition and subtraction. The intervals were based on previous studies in this area (Romberg, 1975). The children wrote their answers in designated spaces, leaving spaces for unknown facts empty. There was a short break between the two subtests.

Addition and subtraction algorithms timed subtests. These subtests each contained 24 items. The items were either 2-digit ± 2-digit or 3-digit ± 3-digit (or in a few cases, 2-digit ± 1-digit); 18 items required regrouping, 6 did not. The items were arranged in order of difficulty (see Table 6). For example, 3-digit problems not requiring regrouping preceded 3-digit problems which required regrouping and, for 3-digit regrouping problems, those in which only the ones were regrouped preceded those in which both ones and tens were regrouped. The students were instructed to try each problem in order (the problems were alphabetized) and to go on to the next problem is unable to do a particular example. Six minutes was allowed for each subtest.

The authors thank James Moser for his assistance in specifying item content and order.



Table 4:

Outline of Sentence-writing Free Response Subtest Items

			**		•
em ID ^a		Form U	Form V		Form W
1A		Sentence-writing 0-20 subt-comparison 11-15	Sentence-writing 0-20 add-part part whole 11-15	•	Sentence-writing 0-20 subt-simple separating 11-15
2B	d d	Sentence-writing 0-99 add-part part whole 0-99	Sentence-writing 0-99 subt-simple separating 0-99	·;	Sentence-writing 0-99 subt-comparison 0-99
3C-		Sentence-writing 0-99 subt-join-addend 0-99	Sentence-writing 0-99 subt-part part whole-addend 0-99	,	Sentence-writing 0-99 add-simple joining 0-99
4D		Sentence-writing 0-20 add-simple joining 11-15	Sentence-writing 0-20 subt-join-addend 11-15		Sentence-writing 0-20 subt-part part whole-addend 11-15

The numeric ID refers to the items as they are labeled in the computer printout reproduced in Appendix B. The alpha ID refers to the actual tests (see Appendix A).

Table 5
Outline of Addition and Subtraction Facts
Recall Items--Speeded Subtests

<u> </u>			
Item ID ^a	Form U	Form V	Form W
	Addition Facts	Recall Subtests	
1C	1 + 5	3 + 1	2 + 4
2D	3 + 2	2 + 5	6+3
3E	4 + 4	1 + 6	5 + 2
4F	3 + 6	7 + 2	2 + 3
. 56	· 4 + 3 v .	2 + 6	5 + 0
бн .	6·+ 2	3 + 5	1 + 3
7Î .	5 + 8	4 + 8	9 + 2
8J	6 + 9	3 + 7	6 + 6
9K	9 + 3	5 + 9	4 + 7
10L	5 + 7	6 + 8	· 7 + 6
11M	8 + 9	8 + 7	9 + 7
12N	3 + 8	4 + 9	6 + 4
	Subtraction Fact	ts Recall Subtests	
1C .	5 - 1	τ. 7 – 1	3 - 2
2D .	9 - 2	8 – 4	6 - 4
3E	8 – 7	' 9 – 5	9 - 1
4F	5 – 3	7 - 4	7 - 3
5G	7 - 6	8 - 6	6 - 1
6н	8 - 5	4 - 3	7 - 5
7 I	14 - 7	11 - 2	10 - 4
. 8J	12 - 5	13 - 8	13 - 9
9K	11 - 8	12 - 7	14 - 8
1.OL	13 - 7	. 15 – 9	.; 3 21 - 7
1 1 M	12 - 9	10 - 2	12 - 4
12N	15 - 8	16 - 7	" 17 - 9
,			

^aThe numeric ID refers to the items as they are labeled in the computer printout repreduced in Appendix B. The alpha ID refers to the actual tests (see Appendix A).

Type of Problem	Number	of	Items
Addition Subtest			
2-digit without regrouping	i	3	
3-digit without regrouping /		3	*
2-digit + 1-digit with regrouping		3	•
2-digit with regrouping		3 .	
3-digit with regrouping in ones	•	.3	
3-digit with regrouping in tens	, -	3 ·	
3-digit with regrouping in ones and tens		3	
3 2-digit addends with regrouping		3	:
Subtraction Subtest	•	•	
2-digit without regrouping	,	3	
3-digit without regrouping		3	
2-digit - 1-digit with regrouping	: /	3	
2-digit with regrouping		3	
3-digit with regrouping in ones		3	
3-digit with regrouping in tens		3	
3-digit with regrouping in ones and tens		3	•
3-digit with regrouping in ones and tens, zero(s) in minuend		3	

Data Collection Procedures

Test Groups

Following the matrix sampling plan described earlier, students in each class were randomly assigned to one of three test groups containing 11-12 students per group in school 3 and 25-26 per group in school 1:

The test groups were assigned to one of the three test forms (U, V, W) according to the schedule in Table 7. Since there were three test times, the students took each form of the test once. However, because some items also appeared in the grade 1 and 2 (fall) tests, students would have taken these items at least twice and in some cases three times before. Because of absences and student mobility, the number of students actually tested after each topic varied somewhat. Also, because the classes moved at different paces through the topics, particularly where there was homogeneous grouping, it was not always possible to test an entire test group at one sitting.

Table 7

Assignment of Students to Test Form

Test Group

Administration Time

A-1

A-2

Test Form Assignment

1

V

Schedule

The achievement monitoring tests were given as soon as possible after each topic was completed. Since instruction in Topic A-1 took about three weeks and was followed by an intervening DMP topic which was not a part of the study, there was a six week interval between administrations.

'Procedure

The tests were administered by Center staff members in one 40 minute sitting during the regular mathematics class periods. The practice of having Center administrators provided uniformity in administration procedures, relieved the teachers from this responsibility, avoided later "teaching to the test," and freed the teacher to participate in interviews with other Center staff.

Since most students had already participated in seven similar test sittings in grades 1 and 2 (see Buchanan & Romberg, 1982a), there was little administrative difficulty in giving the tests. Students were familiar and comfortable with most administrators and the general procedure as well as the format and most items or item types. The algorithm timed subtests had not been administered previously. Perhaps because of the novelty, most students enjoyed the challenge of completing these subtests in the allotted time. However, in general the familiarity with the rest of the test had a negative effect since some students had become increasingly bored by the repetitive testing. The teachers were helpful in motivating the students but nonetheless some were test-weary.

As described previously, the multiple-choice questions were read aloud. Most children had little problem following along. Pacing the multiple-choice subtest was at the administrators' discretion, with the general policy being to move the test along by encouraging children who were pondering at length to "mark the puzzled face." Apparently because of this option, the children did not appear to be discouraged by the few items that they had not met in formal instruction at the time.

One problem occurred during the free-response sentence-writing subtest which may have negatively affected performance on certain items.

Despite reminders, some students failed to listen to the entire verbal story before beginning to write the number sentence. Since the numbers in the written sentence must be reversed from their order in the story for the comparison and join-addend situations, errors resulted when students did not correct themselves after starting the sentence with the first number they heard.

The taped subtests could not be stopped once started; however, examination of the response spaces showed that almost all children kept their place well. Even though there was only 2 seconds' working time between items, students were able to count out answers on their fingers, so that the responses represent a mixture of facts actually committed to memory and "facts" determined during the test. Some children expressed enjoyment in doing the recall tests, but for some the pressure of a timed test was continually frustrating.

The algorithm timed tests were fairly enjoyable for most students. When unable to use the addition or subtraction algorithm correctly, they

were not deterred from completing the majority of the problems using an invented algorithm, usually "buggy."

Results

Scoring the Tests

Subtest statistics and item parameters for each form were computed for all subtests at each administration time using the LERTAP program (Nelson, 1974). Scores representing progress on the objectives were then created for each administration by combining in a single score across forms the proportion correct for all individual items related to that objective; similarly, scores for the composite objectives incorporated the scores for all objectives related to the same content area. Thus, rather than item difficulties, or p values, what might be called "objective difficulties" were calculated to represent group progress toward mastery of the objectives. Since under the matrix sampling plan most objectives were represented by items on at least two and usually all three forms, the "objective difficulties" at any one test time were less affected by possible bias in the random assignment of students to test group than the item and subtest statistics.

Subtest and Item Statistics

Although the results by objective are of primary interest in the study, a brief report of the subtest and item results is offered first as back-ground. The multiple-choice subtest was not developed as a standard norm-referenced measure but rather as a criterion-referenced test with each



item on any one form assessing mastery of a specific objective. Therefore, the total score on the subtest is an aggregate measure of performance on several objectives. Also rather than the usual expectation that about half of the students would respond correctly to each item, it was expected that almost none, some, or almost all of the students might answer correctly depending on the status of instruction at the time of the test. Another factor affecting the subtest and item data for the multiple-choice subtest was guessing. The "puzzled face" or "I haven't learned this yet" option was offered to prevent random guessing but guessing still occurred. Another factor affecting the item and subtest analyses for all but the algorithm subtests was the relatively short test length. The small population of students tested was a factor affecting all analyses.

Tables 8-12 report the multiple-choice and recall subtest statistics for all forms and administration periods for the total population. Information included is the number of individuals tested, number of items, mean, standard deviation, highest and lowest score, Hoyt estimate of reliability, and the standard error of measurement. Since the sentence-writing subtest had only four items per form, subtest statistics are not reported.

The means and standard deviations indicate that the three forms were about equivalent in difficulty within each of the two administration periods. The reliabilities for five of the six test times for the multiple-choice subtests ranged from .62 to .72 which is satisfactory for tests of this type. However, at the A-1 test time, the reliability was .35 for Form W. For the addition and subtraction recall subtests, the respective reliabilities ranged from .78 to .89 and .72 to .86. The



Table 8
Objective Subtest Statistics for Forms U, V, and W

for Two Administration Times

Administration Time	Form	Number of Individuals	Number of Items	Mean	S.D.	Highest Score	Lowest Score	Hoyt Est. r	S.E.M.
,	ŤŤ	21	4 /	. 10.00				4.0	
	Ŭ	31	14	10.29	2.25	14	6	.65	1.28
~_ A1	V	32	14	8.81	2.67	14	4	.72	1.37
	W	31	14	9.03	1.78	. 12	5	.35	1.39
H	·	77) V					· · · · · · · · · · · · · · · · · · ·		
	U	34	. 14	10.88	2.17	14	. 6	. _, 67	1.21
A2	V	31	14	9.35	2.58	13	. 3	.71.	1.33
	W .	30	14	9.87	1.91	. 14	7	.62	1.13

Table 9

Addition Facts Recall - Speeded Subtest Statistics for Forms U, V, and W for Two Administration Times

Administration Time	Form	Number of Individuals	Number of Items	Mean	.S.D.	.Highest Score	Lowest Score	Hoyt Est. r	S.E.M.
, (°	Ŭ,	31	12	9.77	2.57	12	4	.82	1.03
Al	V	32	12	9.41	2.39	12	. 2	.78	1.09
	. W	31	12	9.52	2.92	12	. 1	.87	1.01
	U	34	12	9.32	2.52	12	\ 5	.79	1.11
A2	. • V	' 31	12	9,:13	3 . 27.	12	0	.89	1.03
	W	30	12	10.67	2.22	12	4 .	. 84	(.85

Table 10
Subtraction Facts Recall - Speeded Subtest Statistics for Forms U, V, and W
for Two Administration Times

			6.7	<u> </u>	· r					
Adı	inistration Time	Form	Number of Individuals	Number of Items	Mean	S.D.	Highest Score	Lowest Score	Hoyt ' Est. r	S.E.M.
		. U	31 •	12	8.32	2.26	12	4	.72	1.15
	Al	V	32	12	7.78	2.85	12	2	.82	1.15
		W	31	12	6.97	2.90	12	. 0	81 .	1.21
		U	34	12	7.88	2.88	12	1	.83	1.14
	A2	V.	31	12	7.61	3.24	12	1	.85	1.17
		W	30	12	8.70	2.72	12	1	.82	1,11

Table 1!

Addition Algorithms - Timed Subtest Statistics for Forms U, V, and W
for Two Administration Times

Administration Time	Form	Number of Individuals	Number of Items	Mean	S.D.	Highest Score	Lowest Score	Hoyt Est. r	S.E.M.
,	. U	31	24	10.23	5.70	24	3	.93	1.49
Al ·	. V	32	24	7.59	4.43	21	2	.89	1.41
	W	31	24	8.13	5.50	24	0	.95	
ı	U	. 34	, 24	12.97	5.63	24	4	.91	1.61
A2	V	31	24	13.61	6.12	24	2	.92	1.67
į	W	30	24	15.73	6.14	24	1	.93	1,56

Administration Time	Form	Number of Individuals	Number of Items	Mean	S.D.	Highest Score	Lowest Score	Hoyt Est. r	S.E.M.
	U	31	. 24	5.77	3.02	19	2	.86	1.11
A1	V	32	24	5.75	2.03	9.	٠ 0	.74	1.01
	W	31	24	4.65	2.33	10	0	.74	1.16
	. U '	34	24	4.88	2.31	10	0 -	.78	1.05
A2	V	31	24	5.10	2.61	10	0	.80	1.13
	W	30	24	5 . 77 [′]	3.10	19	0	.87	1.10

reliabilities for the addition and subtraction algorithm subtests, respectively, ranged from .89 to .95 and .74 to .87. The recall and algorithm subtests contained only one type of item so that somewhat higher reliabilities than for the multiple-choice subtests would be expected.

Item statistics for all subtests (including the sentence-writing subtest) for all forms and administration periods appear in Appendix B:

The tables include the number and percentage of students selecting each response (the p-value or item difficulty), the point-biserial and biserial correlations with the subtest and the total test, and the average subtest and total test scores for individuals selecting the correct response.

For the multiple-choice subtest the p-values increased from S-6 to A-1 for 19 of the 42 items, remained constant $(\pm 5\%)$ for 13, and decreased for 10. (S-6 item data were reported in Buchanan & Romberg, 1982a, and are discussed here to provide a point of reference for A-1 data.) Between A-1 and A-2 the situation was quite similar. The p-values increased for 16 items, remained the same for 16, and decreased for 10. Of the 42 items, 9 had p-values $\geq 90.0\%$ at S-6; 7 of these p-values remained $\geq 90.0\%$ at A-1. At A-1 there were a total of 13 items with p-values $\geq 90.0\%$; 11 stayed $\geq 90.0\%$ at A-2. There were a total of 15 items with p-values $\geq 90.0\%$ at A-2.

As a group, the six multiple-choice items associated with the addition and subtraction algorithm objectives showed the most interesting and dramatic changes in p-values, not surprisingly since instruction focused on two-digit addition and subtraction in A-1 and A-2. In A-1 addition





and subtraction without regrouping was taught; in A-2 the addition algorithm was introduced. (The subtraction algorithm was not covered in grade 2.) The p-values for item 14P in Form U, which contained the nonregrouping twodigit subtraction problem -42, increased from 44.4% at S-6 to 87.1% at A-1 clearly reflecting instruction. There was some loss thereafter, to 70.6% at A-2. For one of the addition problems with regrouping, +64 (item 130 in Form U), there was some loss between S-6 and A-1, from a p-value of 48.1% to 38.7%, but then a dramatic increase to 85.3% at A-2 which can be attributed to the introduction of the algorithm. For the other addition item with regrouping, ± 44 (item 130 in Form V), p-values also dropped from 58.6% at S-6 to 31.3% at A-1. However, after the introduction of the addition algorithm, performance improved substantially to 77.4% at the A-2 test Similarly, the subtraction item containing a two-digit and a onedigit number, - 5 (item 14P in Form W), had a p-value of 60.6% at S-6 which decreased dramatically at A-1 to 29.0%. However, in this case at A-2 the p-value remained low, 36.7%, which probably can be attributed to the fact that no instruction occurred on this type of problem. terioration of scores from S-6 to A-1 is interesting. Examination of the distractors suggests that students counted, guessed, or appropriately marked the puzzled face prior to instruction in the larger numbers and in algorithms; afterwards they apparently gained confidence and attempted to solve the problems computationally but had "buggy" procedures.

The other two items for the algorithm objectives had less striking changes in p-values but they were also consistent with instruction. The 53 addition nonregrouping item, +34 (item 130 in Form W), had successively

increasing p-values of 69.7%, 77.4%, and 96.7%. The subtraction regroup85
ing problem, -59 (item 14P in Form V), showed only decreases, from 27.6%
at S-6 to 12.5% and 3.2% at A-1 and A-2, in part because students increasingly utilized a "buggy" algorithm.

There were some notable and not always explicable changes in p-values for certain sentence-writing and problem-solving multiple-choice items, both for numbers 0-20 and 0-99. For the add-part part whole verbal problem in particular the results are confusing. While the p-values for the add-part part whole item assessing the sentence-writing 0-20 objective (9K in Form U) remained very high at S-6, A-1, and A-2 (96.6%, 96.8%, 100.0%), the comparable item for problem-solving 0-20 (3E in Form W) had successive p-values of 100.0%, 64.5%, and 96.7%. On the other hand for larger numbers the item which measured sentence-writing 0-99 for add-part part whole (10L in Form W) exhibited a decrease from 97.0% at S-6 to 74.2% at A-1 and an increase at A-2 (90.0%) while the problem-solving 0-99 item (4F in Form V) increased overall (44.4%, 50.0%, 80.6%) which is consistent with instruction since this item required regrouping, taught in A-2. Further examples of anomalous p-values for the verbal problem items will be discussed in the section on results for the objectives, which in the case of problem-solving and sentence-writing objectives are assessed by a single item.

The three multiple-choice items assessing notation 0-99 for the ordering/place value area were especially difficult. For example, successive p-values for item 8J in Form V were 7.4%, 21.9%, and 25.8%.



These items required both regrouping (in order to rename numbers) and in two cases knowledge of DMP notation. Probably they did not appropriately reflect instruction which stressed simple recognition or naming of the place value of digits.

The 12 items in the free-response sentence-writing subtest on the whole exhibited few dramatic changes in p-values from S-6 to A-1 to A-2, especially for the 0-20 items. These p-values will also be discussed in connection with the objective data.

For the individual stems (basic facts) in the two recall tests, \pvalues fell into two groups at A-1 and A-2 corresponding to the facts with sums/minuends 4-9 and 10-18, or "easy" and "hard" facts. For the "easy" facts for both addition and subtraction, p-values were \geq 80% in almost all cases; about two-thirds of the time the p-values were \geq 90%. There was more variation for the "hard" facts. About two-thirds of the time the addition "hard" facts p-values ranged from 60-75% while subtraction "hard" facts had p-values ranging from 25-45%. Increases (or decreases) in pvalues from A-1 to A-2 tended to be associated with test form and probably reflected scme bias in test group assignment or administration. That is, p-values in Form U tended to decrease, in Form V some increased and some decreased, and in Form W most increased. There was some effect of item position on p-values in the recall subtests, but this was not systematically examined since the items were randomly ordered and the aggregate scores for all items associated with the objective are of primary interest in the study.



The p-values for the algorithm subtests were related to item type and position in the test. Since the items were arranged in order of difficulty, some students were unable to do and/or never attempted items near the end of the test. For example, an early item for addition with two-digit numbers requiring no regrouping (3C in Form W) had p-values of 87.1% at A-1 and 96.7% at A-2. In contrast, a later three-digit addition regrouping item (21T in Form W) had successive p-values of 6.5% and 26.7%. (The algorithm subtests were not given at S-6; only a small sample of items was administered at that time.)

For the majority of items biserial correlations with the subtest score were adequate or better $(\geq .30)$ for the correct response and negative $(\leq -.20)$ for incorrect responses. The "puzzled face" option in the multiple-choice subtest was used appropriately as indicated by the biserials for this response choice, which were almost always strongly negative. That is, children who chose this response for particular items also had low scores on the total subtest.

Interesting item statistics in terms of the study as a whole occurred for items assessing the sentence-writing 0-20 and 0-99 objectives for the two addered and the comparison situations. An example (item 11M in Form U) is presented in Table 13. The distractor containing the reverse operation (plus sign) was we attractive at all test times. All of the items for these three subtraction situations included one or two distractors which were addition sentences, most of which were powerful distractors, although this varied from test time to test time according to problem type. The



Table 13 Item Statistics for the Sentence-writing 0-20, subt-join-addend (11-15) Item, Item 11M in Form U^{a}

Test Time	. Response Chioce	Proportion	Biserial Correlation	Total Subtes Score
	(1) $8-6=\square$ (includes solution)	6.9	-,37	10.50
S-6	(2) $14 + 8 = \square$ (reverse operation)	51.7	.18	13.20
N = 29	(3) $14 - 8 = \square$ (correct response)	31.0	: 29	13.78
	(4) puzzled face	10.3	69	9.00
	(1) $8-6=\square$ (includes solution)	. 0.7	2.6	0 67
A-1	(1) $8-6=\square$ (includes solution) (2) $14+8=\square$ (reverse operation)	9.7 32.3	16 77	9.67
N = 31	(3) 14 - 8 = (correct response)	51.6		8.40 11.69
., 31	(4) puzzled face	6.5	.82 18	9.50
•	(1) $8-6=\square$ (includes solution)	2.9	59	8.00
A-2	(2) $14 + 8 = \square$ (reverse operation)	52.9	76	9.67
N = 34	(3) $14 - 8 = \square$ (correct response)	41.2	.91	12.71
	(4) puzzled face	2.9	18	10.00

The item read: This number story is about a plant. Mark the number sentence that tells how to find the answer. A plant was 8 cubes tall. It grew some. Now it is 14 cubes tall. How much did it grow?

power of the sentence-writing reverse operation distractors may be related to the tendency shown in the individual interviews to use additive strategies such as counting up from a given number or adding on with manipulatives in solving some subtraction verbal problems, particularly the comparison and subt-join-addend problems. (See Anick, Buchanan, Carpenter, Moser, & Steinberg, 1981; Anick & Moser, 1980; Kouba & Moser, 1980). Also, apparently the emphasis on addition in A-2 encouraged the tendency toward choosing this distractor in some cases. For the illustrative item at A-1 it was chosen 32.3% of the time while at A-2 it was selected 52.9% of the time.

Progress on the Objectives

In this section the results of aggregating the item data to create scores representing progress on each objective will be discussed. The objective data ("objective difficulty") will be related to the instructional program the students experienced. The proportion correct for each individual objective and for the composite objectives for the total population at all administration times is reported in Table 14; results for each school and class appear in Appendix C. The S-6 test time data which were gathered in the fall semester of grade 2 are included in Table 14 as a point of reference for the discussion (see Buchanan & Romberg, 1982a). As noted previously, only the data for individual objectives are of interest here—data for the composite objectives were prepared for subsequent analyses.



(continued)

Table 14

Progress Toward Objectives Across Administration Times as Represented by Proportion of Items Answered Correctly for Total Population

	N		Results Objecti	ves -			sult's fo ite Obje	
Description of Objectives	Number of Items	S-6ª	A-l	A-2	Number of Items	S-6	A-1	A-2
Prerequisite Instructional Objectives						·	,	
	9							
Numerousness	•		,			•	•	
writes 0-99	3	77.5	86.2	88.4		E .	1	
represents 0-99	3	85.4	88.3	94.7	6	81.5	87.2	91.6
Ordering, Place Value		(1						
orders 0-99	. 3	٦ 78.7	89.4	83.2	· ·			,
notation 0-99	3	12.4	18.1	26.3	6	45.5	53.7	54.7
Instructional Objectives for S,A Topics	· • • • • • • • • • • • • • • • • • • •		•					• •
Sentence-Writing 0-20					• '			•
add-simple joining (B)	1 .	100.0	90.3	93.3	Same			
subt-simple separating (A)	1	100.0	96.9	96.8	****	4. *		
subt-part part whole-addend (B)	1	59.3	75.0	54.8	• •		1	• .
add-part part whole (A)	1	96.6	96.8	100.0		ı		,
subt-comparison (A)	1	72.7	71.0	70.0	•			
subt-join-addend (B)	· 1	,31.0	51.6	41.2	6 .	77.0	80.3	75.8
Sentence-Writing 0-20 (Free Response)						,,,,	••••	, , , ,
add-simple joining	• 1	. 06. 6	100.0	0/. 1	,		ı	ø
subt-simple separating	1	96.6		94.1		ut.	1	
subt-part part whole-addend	1	97.0 78.8	96.8 80.6	93.3	. 2			
add-part part whole	1	100.0	96.9	66.7 100.0			≠	
subt-comparison	1	48.3		52.9	•	•		
subt-join-addend	1	59.3	62.5	54.8	6	80.3	· 81.4	76.8
-	*	37.3		J710		00.0	01.4	
60	•					•		61



	Number		Results Objecti	ves	Number		sults for ite Objec	
Description of Objectives '	of Items	<u>\$</u> -6	A-1	A-2	Number of Items	S-6	A-1	A-2
Sentence-Writing 0-99			•				•	
add-simple joining (B)	1	92.6	90.6	1 90.3				
subt-simple separating (A)	1	72.4	90.3	91.2				
subt-part part whole-addend (B)	1	48.3	74.2	73.5				
add-part part whole (A)	1	97.0	74.2	90.0				
subt-comparison (A)	\ 1	37.0	46.9	38.7				
subt-join-addend (B)	1	21.2	41.9	46.7	, ę	61.2	69.7	72.
entence-Writing 0-99 (Free Response)	•		•					
add-simple joining	1	, 87.9	90.3	100.0				
subt-simple separating	1	96.3	100.0	90.3				,
subt-part part whole-addend	1	74.1	'78.1	64.5		1		
add-part part whole	• 1	86.2	100.0	94.1		(
subt-comparison	1	57.6	35.5	46.7				
subt-join-addend	1	37.9	45.2	41.2	6	73.0	75.0	72.
lgorithms								
add 0-99	3 ^c	59.6	48.9	. 86.3				
subt 0-99	3 ^c	44.9	42.6	37.9	6	52.3	45.7	62.
oninstructional Objectives		,				· ·		
The fill the state of the state			•					
roblem Solving ~:0	1	07.0	100.0	06.7	,	1		
add-simple joining (B)	1	87.9	100.0	96.7	***		•	
subt-simple separating (A)	1	86.2	90.3	94.1				
subt-part part whole-addend (B)	1	85.2	78.1	77.4	ę			
add-part part whole (A)	1	100.0	64.5	96.7	r		2	
subt-comparison (A)	1	85.2	59.4	77.4		00 1	00.3	89
subt-join-addend (B)	1	82.8	90.3	94.1	6	88.2	80.3	07,
roblem-Solving 0-99					•			
add-simple joining (B)	1	62.1	67.7	79.4	•			
subt-simple separating (A)	1	33.3	29.0	16.7				
subt-part part whole-addend (B)	1	27.3	29.0	13.3				
add-part part whole (A)	1 _d	44.4	50.0	80.6	4	•		. 4
subt-comparison (A)	$\frac{1}{1}d$	51.7	67.7	76.5	1			
subt-join-addend (B)	1."	59.3	65.6	71.0	б	45.5	51.6	57

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(conginued)

	1		Results for Objectives			Results for Composite Objectives		
Description of Objectives	Number of Items	S-6	S-6 A-1 A-2		Number of Items	S-6	A-1	A-2
) 11 (n (n , /c		ف فیلنی روبی نو صدی	4					
Recall of Basic Facts (Speeded Tests) add 0-20		·			36	79.1	79.7	80.7
subt 0-20	٦.				36	65.3	64.1	67.]
Algorithms (Timed Tests) add 2-digit, no regrouping add 2-digit, regrouping	9(3) ^e 18(6)	63.7 34.1	90.4 30.5	94.7 72.3	27(9)	44.0	50.5	79 . 8
add 3-digit, no regrouping add 3-digit, regrouping	9(2) 27(3)	43.2 14.6	86.5 15.4	86.0 41.5	36(5)	26.0	33.2	52.6
3 2-digit addends, regrouping	9(1)	13.9	3.9	18.6	9(1)	13.9	3.9	18.6
subt 2-digit, no regrouping subt 2-digit, regrouping	9(3), 18(6)	54.0 11.5	86.2 7.8	81.4 7.4	27(9)	25.7	33.9	32.0
subt 3-digit, no regrouping subt 3-digit, regrouping	9(3) 36(3)	44.2 1.8	74.1 1.0	75.4 .7	45(6)	23.0	15.6	15.

For those objectives for which there are three items, the number of subjects represented in the proportion correct at a particular test time is ascertained simply by summing the N's for the three forms; however, when there are more or less than three items, the N is increased or decreased by 27-39 subjects per item.

		S - 6	A-1	A-2
Form U	Ŋ =	29(38)	31	34
Form V	N =	27(36)	32	31
Form W	N =	33(39)	31	30

The numbers in parentheses are the N's for the Algorithm Timed Tests which were given on a different day.

^eThe numbers in parentheses refer to the sample of items given at S-6.



^aS-6 data were collected in the fall semester and are included here to provide a point of reference for A-1 data. Dunless otherwise indicated, items were multiple choice.

⁶ Tone of the three items did not require regrouping.

dThis item did not require regrouping.

The sentence-writing objectives for the S and A topics were not stated in terms of particular verbal problem types in the instructional materials, but for purposes of achievement monitoring each type was treated as an individual instructional objective. This was also true for the problemsolving objectives. Since each verbal problem type is represented by only one item, objective difficulty is the same as a p-value or item difficulty and therefore the results for sentence-writing and problem-solving must be considered with caution. The algorithm 0-99 objectives also were stated in general terms in the instructional materials but were subdivided for assessment purposes according to whether or not regrouping was required. Again, this was true for the 0-999 algorithm objectives as well.

Numerousness; ordering, place value. Instruction on the four prerequisite instructional objectives related to the numbers 0-99 occurred
between the S-6 and A-1 test times. Performance at S-6 indicated a high
degree of familiarity with the two numerousness objectives and one of
the ordering/place value objectives despite the lack of formal instruction; after instruction the A-1 and A-2 scores were at or near mastery
level. For example, A-2 scores were 88.4%, 94.7%, and 83.2%, respectively, for writes 0-99, represents 0-99, and orders 0-99.

The fourth objective for ordering/place value (notation 0-99) was extremely difficult at all three test times with successive scores of 12.4%, 18.1%, and 26.3%. The three items for this objective required students to perform fairly complex regrouping of numbers and in two



A proportion correct > 90% is the criterion for mastery. While it is recognized that not every student will have mastered an objective using this criterion, it allows for measurement error and assures that most students have reached mastery.

cases incorporated the unique DMP notation for place value. For example, item 8J in Form U contained the number 26 in the stem and three response choices: 20(10) + 5, 1(10) + 16, and 2(10) + 16. This item type probably did not accurately reflect the effectiveness or emphasis of instruction which stressed recognition of the value of each digit (place) in a number rather than regrouping procedures.

A high level of performance on these prerequisite objectives was desirable because instruction in the algorithm topics assumed students understood the numbers 0-99. Since scores on several of the instructional objectives for these topics were at mastery level both in the spring semester (as discussed below) and even early in the fall semester (see Buchanan & Romberg, 1982a), there is little reason to believe that the poor showing on the single prerequisite objective had any bearing on performance in general.

Sentence-writing 0-20. The sentence-writing data in Table 14 are annotated by the labels described earlier, Sets A and B, according to whether or not item characteristics such as syntax corresponded to interview tasks. This distinction may be useful in future analyses relating interview and achievement monitoring data.

As of S-6 all of the sentence-writing 0-20 objectives should have been mastered according to the program specifications. However, at that time the two addition and the subt-separating objectives had been attained while the three remaining subtraction objectives (subt-part part whole-addend, subt-comparison, subt-join-addend) had not been mastered in either the multiple-choice or free-response test modes.



Although there was no instruction on sentence-writing 0-20 during A-1 and A-2, in A-1 the subtraction verbal situations were reviewed in conjunction with the introduction of addition and subtraction of two-digit numbers without regrouping. Apparently this review had some transfer benefit to sentence-writing with smaller numbers for the subt-part part whole-addend and subt-join-addend objectives in that scores improved, respectively, from 59.3% at S-6 to 75.0% at A-1 and 31.0% (S-6) to 51.6% (A-1) in the multiple-choice context. There was negligible change for these two objectives from S-6 to A-1 in the free-response mode, however, possibly because S-6 scores were higher (i.e., 78.8%, 59.3%) than in the multiple-choice mode leaving less room for growth. After A-2 in which only addition verbal problems were covered, the scores dropped for both of, the addend objectives in both modes so that there was little overall improvement from S-6 to A-2.

As discussed in the section pertaining to item data, the distractors containing the reverse operation were attractive at all test times, but particularly at A-2 for the two addend objectives (items) in the multiple-choice subtest. For example, for item 11M in Form V which assessed the subt-part part whole-addend objective, the distractor containing the reverse operation was chosen 29.6% of the time at S-6, 15.6% at A-1, and 38.7% at A-2. It may be that the instructional emphasis on addition problems in A-2 influenced students to revert to these distractors after having improved their performance at A-1. This notion seems supported by the fact that the scores for the addend objectives in the free-response subtest also dropped at A-2 (though they had not shown the same improve-

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ment from S-6 to A-1) because more students wrote an erroneous addition sentence.

Scores for the subt-comparison objective remained virtually constant at all three test times in both test contexts and apparently were not affected by instruction. It is interesting that the free-response score for the subt-comparison objective was lower than the multiple-choice score while the reverse was true for the two addend objectives.

Mastery status on the two addition and the subt-separating objectives was maintained from S-6 to A-1 and A-2. In summary, for the six sentence-writing 0-20 objectives, there was little notable or permanent change in scores from the S-6 to Λ -2 test times, a result consistent with instruction in that it did not directly focus on these objectives.

Sentence-writing 0-09. The results for sentence-writing with larger numbers were parallel in many respects to the results for smaller numbers. Though there had been no instruction on the numbers 0-99 or in sentence-writing 0-99 at the S-6 test time, both the add-joining and add-part part whole objectives had already been mastered as measured by the multiple-choice subtest (92.6% and 97.0%) and had virtually been mastered in the free-response mode (87.9%, 86.2%). The subt-separating objective had been mastered at S-6 in the latter setting (96.3%) though, inexplicably, the multiple-choice S-6 score was 72.4%. At A-1 and A-2 all three objectives had mastery level scores in all cases except for one anomalous score (at A-1 the score for the add-part part whole objective in the multiple-choice mode was 74.2%).



The other three subtraction objectives for sentence-writing 0-99 had not been mastered at S-6; after instruction on the numbers 0-99 during the interim period between S-6 and A-1 and on addition and subtraction with tw -digit numbers without regrouping in A-1, there was notable improvement on the multiple-choice subtest for the subt-part part wholeaddend and subt-join-addend objectives. The score for the first addend objective at S-6 was 48.3% which improved markedly to 74.2% at A-1; similarly, the score for the second addend objective increased from 21.2% to 41.9%. There was slight improvement from S-6 to n-1 for both addend objectives in the free-response mode but after A-2 instruction in which only addition problems were included, there were drops in scores for both objectives. In fact the decline for the tobt-part part wholeaddend objective resulted in an A-2 score (64.5%) which was lower than the S-6 score (74.1%). The reverse operation discractors were attractive at all three test times for the three nonseparating subtraction situations though the increased tendency to select them at A-2 occurred only for the comparison problem.

The results for the subt-comparison objective were inconsistent from test time to test time in the two modes. At A-1 improvement was shown in the multiple-choice context and a substantial loss in the free-response mode. Overall from S-6 to A-2, however, there was negligible change in the multiple-choice context (37.0%, 38.7%) and some decrease in the free-response mode (57.6%, 46.7%). In contrast to the data for the 0-20 objective, there seemed to be more success on the free-response test than on the multiple-choice test.



In conclusion, while three of the six sentence-writing 0-99 objectives were virtually mastered prior to instruction, progress on the three more difficult subtraction servences seemed to be dependent on instruction though the results were not totally consistent. After A-1 there was definite improvement on all three objectives on the multiple-choice subtest and on the two addend objectives on the free-response subtest. However, after A-2 in which these situations were not covered, minimal progress occurred and/or there were decreases in scores.

The effect of instruction on performance for the addition objective was very dramatic; prior to the introduction of the algorithm, scores at S-6 and A-1 were 59.6% and 48.9%. After instruction the A-2 score was 86.3%. As discussed previously relative to the item statistics, most students obviously grasped the procedure immediately. For example, the 29 A-1 p-value for item 130 i. Form J (+ 64) was 38.7% while at A-2 the score was 85.3%.

Contrary to expectations, there was a small overall drop in scores from S-6 (44.9%) to A-2 (37.9%) for the subtraction algorithm objective. It had been expected that there would be some progress on this objective



reflecting the work in A-1 with subtraction of two-digit numbers not re67
quiring regrouping, and as predicted, the nonregrouping item (-42, item)
14P in Form U) had a p-value at S-6 of 44.4% and at A-1 and A-2 of 87.1%
and 70.6%. However, the improvement on this item was negated by the regression on the other two subtraction items; item 14P in Form W (-5) had successive p-values of 60.6%, 29.0%, and 36.7%, and item 14P in Form V 85
(-59) had p-values of 27.6%, 12.5%, and 3.2%. Apparently, students gained the confidence to try solving these problems computationally (rather than guessing, counting, or marking the "puzzled face") but could not do so accurately.

Problem-solving 0-20. The problem solving items required the child to select the correct answer for the verbal situations. Again the data in Table 14 are labeled for Sets A and B though this distinction is not of interest here.

At S-6 scores for all six problem-solving 0-20 objectives were near or at mastery level. Although there was no review of these objectives during A-1 or A-2, there was practice on verbal problems with larger numbers so it was not surprising that at A-2 mastery status for both addition objectives, the subt-separating objective, and the subt-join-addend objective had been maintained. Perhaps due to some anomaly in the testing, there was a startling drop in the score for the add-part-part whole objective from S-6 (100.0%) to A-1 (64.5%) which was cancelled at A-2 (96.7%). Scores for the subt-part part whole-addend and subt-comparison objectives declined somewhat overall from S-6 to A-2, from

85.2% to 77.4% in both cases. There was also a drop for the comparison objective at A-1, to 59.4%.

In general, however, problem-solving skills were maintained quite well without direct instruction. Also, problem-solving 0-20 performance was better than sentence-writing 0-20 performance for the three more difficult subtraction objectives. This discrepancy is particularly notable for the subt-join-addend situation which had A-2 scores of 41.2% (multiple-choice) and 54.8% (free response) for sentence-writing and 94.1% for problem-solving.

Problem-solving 0-99. It is difficult to compare performance on the six problem-solving 0-99 objectives as a group because the items for two of the objectives did not require regrouping—the subt—comparison and subt—join-addend items—so these objectives were no doubt relatively less difficult than they might have been. Scores for both improved consistently from S-6 to A-1 to A-2, probably reflecting review of these verbal situations and the introduction of two-digit numbers and computation (without regrouping). Progress on the two addition objectives was also consistent with instruction, very clearly mirroring the introduction of the addition algorithm at A-2. For example, the scores for the add-part part whole objective for S-6, A-1, and A-2 were 44.4%, 50.0%, and 80.6%. At A-2 the scores for these four objectives were all in the 70-80% range.

Performance on the two remaining objectives, subt-separating and subt-part part whole-addend, was poor at S-6 and A-1 and deteriorated at A-2. The respective scores for S-6, A-1, and A-2 were 33.3%, 29.0%, and 16.7%; and 27.3%, 29.0%, and 13.3%. Examination of the distractors for



the subt-separating item (item 4F in Form W) indicates that more students attempted to solve the problem algorithmically at A-2 but used a "buggy" algorithm. For the addend item (item '6H in Form W) at A-2 there was increased tendency to add to solve, i.e., to reverse the operation. Probably in both cases the emphasis in A-2 on addition and the addition algorithm influenced the choice of distractors.

In summary, for the two addition problem-solving 0-99 objectives and the two subtraction objectives assessed by items not requiring regrouping, progress from S-6 to A-2 was steady and positively affected by instruction. For the two subtraction objectives containing items requiring regrouping, scores were low initially and declined further apparently negatively affected by instruction which was not directed toward these objectives.

Recall of addition and subtraction facts (speeded tests). Increasing the speed with which students could respond to open sentences (basic facts) was not a formally stated objective of instruction for the A topics. However, it was anticipated that in the course of instruction teachers would employ standard techniques for facts recall such as flash card drills to varying degrees. This practice plus use of the facts within two-digit computation was expected to produce improved facility in recall.

However, there was negligible improvement on these objectives from the S-6 to A-1 to A-2 test times. Scores for addition were 79.1%, 79.7%, and 80.7%; for subtraction they were 65.3%, 64.1%, and 67.1%. Perhapson students had simply reached a plateau, or, there was so little instructional emphasis in this area due to the preoccupation with two-digit numbers and the addition algorithm that performance was not influenced.

Algorithms (timed tests). Although the algorithm objectives as assessed under timed conditions were somewhat arbitrarily classified as noninstructional objectives, these wests were essentially a free-response measure of the regular, instructional algorithm objectives for the numbers 0-99, particularly since so many students completed all items. The timed tests also included 3-digit numbers (algorithms) which were not covered in instruction; in this case the classification is more relevant.

In Table 14 the results for the addition and subtraction algorithm objectives are reported separately for regrouping and nonregrouping problems for the numbers 0-99 and 0-999. A further breakdown of the data by problem type (e.g., 3-digit + 3-digit with regrouping in tens only) will be given later. The S-6 data for the sample of items administered at that time are also presented in Table 14 but the reader is cautioned that the sample did not precisely parallel the actual test; that is, while onethird of the Arms at S-6 for both u-digit nonregrouping and regrouping objective a ratained 2-digit + led git numbers, at A-1 and A-2 there were no items of this type for nonregulating and one-half of the regrouping icoms were 2 digit + 1-digit. whso we 8-6 about one-third of all 3-digit fitems (regrouping and nonregrouping) involved 3-digit is 2-digit numbers while A-1 and A-2 there were to items of this type. Nonetheless, the S-6 data offer a reasonable estimate of baseline performance. The A-1 data can also be considered baseline insofar as the formal algorithms are concerned since the first algorithm was not covered until A-2.

The results for 1-digit numbers were very clearly related to instruction. Also, even though 3-digit numbers per se and computation with



3-digit numbers were not covered during the spring semester, the data for these problems paralleled the 2-digit data for most objectives and suggested that students readily generalized from instruction on 2-digit numbers to 3-digit numbers.

After the introduction of the numbers 0-99 and computation without regrouping during A-1, the score for the 2-digit addition without regrouping objective was at mastery level (90.4%) and scores for the 3-digit addition without regrouping and 2-digit subtraction without regrouping objectives approached mastery (respectively, 86.5% and 86.2%). The 3-digit nonnegrouping subtraction objective also had a relatively high score (74.1%). At A-2 the status on these four objectives was maintained.

For the 2-digit addition regrouping objectives (except for 3 addends), S-6 and A-1 scores demonstrated some familiarity with the algorithms prior to instruction. After the introduction of the addition algorithm at A-2, dramatic improvement occurred on the 2-digit regrouping objective from the S-6 and A-1 status (34.1%, 30.5%) to 72.3% at A-2. Again there apparently was transfer to the 3-digit regrouping objective for which scores increased from 14.6% and 15.4% to 41.5%. There was also some overall growth from S-4 to A-2 on the problems with three addends. No instruction on the subtraction algorithm was, carried out during this period and the scores mirrored this by remaining virtually constant for both 2-digit and 3-digit numbers at the three test times.

In summary, progress on both algorithmic and nonalgorithmic computation for both addition and subtraction of 2-digit numbers was con-



sistent with instruction. For nonregrouping problems for both operations, and for addition problems requiring the use of the algorithm, skills were generalized to 3-digit numbers.

In Table 15 the results for all addition and subtraction problem types are reported separately. Also, this table presents data on proportion of items attempted for each item type and the proportion correct of those attempted. (S-6 data are not included because the number of items was so small and virtually all items were completed; also, the items were administered in a different order and the item types were not entirely equivalent.) The 2-digit problem types were administered in the order in which they appear in the table; similarly the 3-digit problems were given in that order. However, the 3-digit nonregrouping problems appeared between the 2-digit nonregrouping and the 2-digit 1-digit problems on the tests themselves (see Table 6).

Examination of the percent correct columns in Table 15 reveals some interesting results about the relative difficulty of item types. First, it indicates that 2-digit ± 1-digit with regrouping problems for both addition and subtraction are somewhat more difficult than the standard 2-digit ± 2-digit regrouping problems, even though the problems involving 1-digit numbers could conceivably have been solved simply by counting. Secondly, it appears that the generalization from 2-digit to 3-digit numbers after A-2 instruction on the addition algorithm is more pronounced for problems involving regrouping of tens than for those with regrouping of ones since the tens problems were easier. Very few subtraction regrouping problems were completed correctly so it is not



Table 15

Relationship Between Items Attempted and Items Answered Correctly

for the Algorithm Timed Tests

•	% Correc	t of Total	% Attempt	ed of Total	% Correct	of Attempts
Type of Problem	A-1	A-2	A-1	A-2	A-1	A-2
		Addition			Andrew Street, and the street,	
,)		c		
2-digit without regrouping	90.4	94.7	97.9	97.5	92.5	96.5
2-digit + 1-digit with regrouping	21.3	63.5	81.9	86.7	27.2	72.4
2-digit with regrouping	39.7	81.0	89.0	92.6	43.1	84.4
3-digit without regrouping ^a	86.5	86.0	92.6	93.7	93.6	91.1
3-digit with regrouping in ones	18.8	41.4	78.0	82.1	22.5	50.4 .
3-digit with regrouping in tens	17,7	55.1	62.1	77.5	27.0	70.0
3-digit with regrouping in ones and tens	9.6	28.1	43.3	64.6	24.0	40.2
3 2-digit addends with regrouping	3.9	18.6	20.6	35.4	15.3	48.7
		Subtraction	1		tin diginal trade di salah di	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
2-digit without regrouping	86.2	81.4	96.1	95.4	88.9	84.8
2-digit - 1-digit with regrouping	2.5	2.8	81.6	79.0	2.8	3.4
2-digit with regrouping	13.1	11.9	82.6	83.2	16.1	15.3
3-digit without regrouping a	74.1	75.4	84.4	87.0	83.1	85.5
3-digit with regrouping in ones	2.5	1.4	67.7	63.9	3.3	2.0
3-digit with regrouping in tens	.7	.7	57.4	54.0	1.1	1.1
3-digit with regrouping in ones and tens	7	.7	41.1	41.4	1.5	2.2
3-digit with regrouping, zero(s) in minuend	Ö	0	33.3	32.6	0	0

 $^{^{\}mathrm{a}}$ In the tests themselves these items appeared just after the 2-digit without regrouping items.

Note. There were 9 items for each problem type.



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possible to compare these two problem types (tens vs. ones) and in any case, it may be premature to do so prior to instruction in the algorithm.

In general, the relative difficulties appeared to correspond to the predicted order, that is, the order in which the test items were administered.

A time limit of 6 minutes was established for each subtest. Therefore, scores representing percent correct for item types which occurred later in the test might have been artificially deflated if few or no students ever reached these items, or if only the less capable students reached them by hurrying through the test, perhaps by applying quick but "buggy" algorithms. Further, if only the more capable students attempted the later items, and it is assumed that the less able students might have done them correctly had they had time to try them, then the scores also might not be an accurate reflection of progress. Of course, it is possible that both the most and the least capable students attempted these problems but for different reasons.

The question is more or less moot for all 2-digit problem types (except the 3 addends) and for the 3-digit nonregrouping problems since 79% or more of these items were attempted at A-1 and 4-2. For these problem types the percent correct scores probably quite adequately reflect the status of the group. This means that the aggregate data for these objectives in Table 14 can also be viewed with confidence. For the 3-digit with regrouping problem types, from 43.3% to 82.1% of the addition problems were attempted and from 32.6% to 67.7% of the subtraction problems. For some of these problem types, the data in Table 15



and Table 14 as well, may now fully represent the population but are probably a fairly accurate portrayal, especially if we assume that usually the more capable rather than the less capable students moved through the test faster and that the less capable students would not have done well on the later items.

It was conjectured that prior to addition algorithm instruction in A-2 students as a whole might complete a greater number of problems less accurately than after instruction when they might be expected to complete fewer problems more accurately. Although it may be that some individual students' progress followed this pattern, on the whole this hypothesis does not seem to be supported by the data in Table 15. That is, there was improvement both in accuracy and quantity for addition regrouping problems from A-1 to A-2.

Conclusion

In general, the results for the A-1 and A-2 test times reflected the instructional program. That is, there was marked improvement on the various objectives associated with the use of the addition algorithm with 2-digit numbers and with computation not involving regrouping for both addition and subtraction of 2-digit numbers. This pattern of growth extended to the problem-solving 0-99 objectives, and even to computation with 3-digit numbers on which there had been no instruction whatsoever.

Instruction was set in the verbal blem context and this was reflected by progress on two of the three sentence-writing 0-99 objections.



tives not previously mastered, the two missing addend subtraction objectives as assessed in the multiple-choice test mode. However, status in the free-response mode for these objectives declined in one case and in the other improved only slightly. Progress demonstrated was not to mastery level in either mode. No improvement was shown for the domparison objective, the third sentence-writing 0-99 objective not previously mastered.

For the sentence-writing 0-20, problem solving 0-20, and recall objectives not included in instruction during this period, little overall or consistent progress occurred. On the whole scores for these objectives which already were mastered were maintained at mastery level but for those which were not, there tended to be some overall decline from S-6 to A-2. The prerequisite objectives for the numbers 0-99 were in three of four cases mastered prior to the algorithm topics and there was little change thereafter.



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Appendix A

ADMINISTRATOR'S MANUALS AND STUDENT TESTS

FORMS U, 7, W



Directions for Administering Achievement Monitoring Test &

Coordinated Study #1 & #2

General Directions

Reading the Test. The first part of this test is in multiple choice format and is read aloud to the children. Read the questions exactly as they are printed in the directions; do not paraphrase. Each question is read twice—or the key phrases are repeated after the original question is read. Read the questions at a conversational pace. The second part of the test involves verbal problems for which the child must write, but not solve, a number sentence. Again, you will read the number story twice. The third part of the test is timed and assesses the child's speed and accuracy using the addition and subtraction algorithms. The fourth segment, the basic facts speed test, is administered via tape.

Since many children will not know how to do the majority of the test, especially at the beginning of the year, they will no doubt want to ask questions or want you to repeat items yet again. Please do not allow this—instead, ask them to answer "as best they can" or to mark the "puzzled face" to show they have "not learned this yet." Note also that reading the answers to the children is not permitted.

Since this is a group-administered test, verbal exchanges with individual children can be distracting and interfering-try to establish a policy of not talking and not allowing the children to talk in between questions.

Should the above directions seem unnecessarily stringent, please realize that we are attempting to measure change over time and that we have very few questions on which to base this measurement. The children will take the other forms of this same test at 6 week intervals and then they will repeat the three forms; hopefully each time they will be able to answer the questions more successfully.

Make sure the children mark only one box and that they mark at least one box. Encourage them to use the "puzzled face" by reminding them that this response means "I haven't learned this (how to do this) yet."

Pacing the Test. Try to keep the test moving. Expecially for the number story and algorithm problems it may take a "long" time for the children to figure out an answer. As a rule of thumb, allow the group to work on each question until only one or two children are still working. At that point, if necessary, suggest that anyone still working-mark the "puzzled face" box. Then just go on to the next question without waiting longer. The second part of the test, sentence writing, may go slowly. Remind the children



not to solve the problem. The third part of the test is timed and must be administe ed accordingly.

The last section, the taped basic facts, is a speed test. Once the tape is started, it will not be stopped.

Estimated Administration Times

Part 1 10 min.

Part 2 5 min.

Part 3 15 min.

Part 4 5 min.

Preparations' for Testing

The children will road two pencils with erasers. They will not need scratch paper for this test, since they will write in the "arrow" space. The children's names have been written on the tests in advance; distribute the tests, making sure each child has his/her own test.

Specific Directions

AY: Today we are going to do some work with numbers in this booklet. You learned how to do some parts of the work last year in first grade. You will learn how to do more of the work this year in second grade. We don't expect you to know how to do all of the work today. We will come back again and again while you are in second grade . . . each time you will have learned how to do more of the work.

Find your name on the line. Look at the big box with an X in it-you will answer the questions today by making a big X like this one.

XAMPLE A Now find row A. I am going to ask you a question. You will answer by making a big X in one of the boxes. If you haven't learned about the answer yet, make an X in the last box, the one with the puzzled face. [Pause.]

Which box has a circle cut into 4 pieces? Make an X on the box with a circle cut into four pieces. [Pause.] If you haven't learned this yet, make an X on the box with the puzzled face. [Check to see that the children mark only cne box in the row.]

B Look at the bats and balls in the arrow. Are there more bats, more balls, or the same number? Make an X on the box that tells whether there are more bats, more balls, or the same number.

Now turn to the next page and fold your booklet.



- [Note: Starting with row C, do not assist the children with the test, except to mo sure they are marking only one box . . . and at least one tox.]
- Find row C. Lo at the apples in the arrow. Make an X in the box that tells how many apples there are ... how many apples there are. [Pause.] Remember, If you naven't learned about this yet, mark the puzzled face.
- D Row D. Look at the number of the arrow. Make an X in the box which has that many marbles in it.
- E Tow R. I am going to read a reabs, story about pencils. I will read the cory twice. List to the simon before you mark a box. John had 12 type:ils. He gave 7 sencils to Tim. How many pencils did John have left to peat. Allow time for the children to figure out their answers to make 3-H.]
- Row F. This number story is about collections of cans. For this story, you may write on the paper if you want to. Debbie has 32 cans is her collection. Her brother Bob has 56 cans. How many more cans loes Bob have than Debbie? [Repeat and give "puzzled face". reminder, if necessary, to move the test along. Also remind them to make an X on their answer, if necessary.]
- Row G. This number story is about bricks. Mr. Brown needs 11 bricks. He has 8 bricks already. How many more bricks should he get? [Repeat.]
- Row H. This number story is about books. For this story, you may write on the paper if you want to. The library had 54 books about animals. Then the librarian bought 18 more saimal books. How many animal books does the library have now? [Re] sat, use "puzzled face" and "make an X" reminders as necessary.]

Turn to the next page.

- I dow I. Look at the numbers in the arrow. They are in order from smallest to largest. What number goes on the line ... what number goes on the line?
- J Row J. Look at the number in the arow. Make an X on the box that has has another name for the number ... another name for the number.
- Row K. Look at the number sentences. One of the number sentences tells how to find the answer for this story about cards. After I read the story, make an X on the number sentence that tells how to find the answer. Bill has 4 football cards. He also has 9 baseball cards. How many cards does Bill have altogether? [Repeat.]
- Row L. This number stor is about candies. Make an X on the number sentence that tells have a find the answer. Kathy had 78 candies. She gave 35 candies to Fin. How many candies did Kathy have left? [Repeat.]
- Row M. This number story is about a plant. A plant was 8 cubes tall. It grew some. Now it is 14 cubes tall. How much did it grow? [Repeat.]



Row N. This number story is about trees. Mark the number sentence that tells how to find the answer. Mrs. Turner had 67 trees. 29 trees were pine trees and the rest were oak trees. How many trees were oak trees? [Repeat.]

Turn to the next page.

- Row O. Look at the problem in the arrow. What number is the answer ... what number is the answer? [Mention "write on paper" reminder]
- P Row P. Look at the problem in the arrow. What number is the answer ... what number is the answer?

Now we will do some different work. I will read a number story to you. Then I want you to write a number sentence for the story. You don't need to solve the sentence. Just write the sentence the best you can without solving it. Write it on the line.

- A Jos has 9 Mistles. His sister Debra has 15 whistles. How many more whistles does Debra have than Joe? [Repear.]
- STORY B Mil has 3 red leaves. He also has 26 yellow leaves. How many leaves does Mike have altogether? [Repeat.]
- STORY C Jill has 29 nails. How many more nails does she have to put with them so she has 87 nails altoge her? [Repeat.]
- STORY D Jerr. had apples. His mother gave him 8 more apples. How many apples did Jerry have altegether? [Repeat.]

[Give the cx.] 'ren a short stand up-stretch-touch toes--and so on--break" here.]
Turn to the next page, the one that says "ADD" at the top.

Be sure you have the page that says "ADD" on it. All the problems on this page are addition problems. Each problem has a letter by it ... A, B, C, D... all the way to V, W and A. When I say "Good, start with problem A, then do B, then C, and so on until I say "Stor!" If you can't do a problem, so on to the next one. Do as many problems as you can before I say "STOP!" Ready? GO! (Allow 6 minutes) STOP! You worked very hard on these problems. You will be learning how to do them faster (Reassure the children as you see fit.) Now turn to the page that says "SUBTRACT."

Be sure you have the page that says "SUBTRACT." All the problems on this page are subtraction. When I say "GO," start with problem A, then do B, then C... do as many as you can before I say "STOP!" Ready? GO! (Allow 6 minutes.) I could tell you tried your best on these problems. You will be learning how to do them faster.

Now turn to the last page.

The work on this page is different. I want to see how quickly you can think of the answers for addition and subtraction problems.

I am going to play a tape—the voice on the tape will say problems, like this: [Play the four sample problems 2 + 8, 5 + 6, 7 + 4, 8 + 3.] The problems will go very quickly, even faster than when you were in first grade. Today you probably will not know very many answers, but when I come back and we do these problems again, you will know more. Don't feel bad if you don't know the answers today.

We will start with the row of boxes at the top of the page--the ones with capital letters A, B, C The voice on the tape will tell you where to write your answers. Do your best to keep up with the voice. Get your pencil ready. [Start tape.]

Script on Tape: Look at the row of boxes at the top of the page. Find box

A. I am going to say problems like 5 + 4. The answer for 5 + 4 is 9.

So there is a 9 in box A. Find Box B. What is 7 + 1? 7 + 1 is 8. You write an 8 in box B.

[10 second pause; make sure the children are working on the top row]

Now I am going to say problems for all the rest of the boxes in the top

row. I will not stop, so write your answers quickly. If you can't think of
an answer, just leave the box empty. Ready?

Box C Form U 1 + 5Box D 3 + 2Box E Box F 3 + 6Box G Box H 5 + 8Box I Box J Box K Box L Box M

Box N

3 + 8

U

6 70

Stop working. You may rest for a moment...then we will work on the bottom row.

[13 postern i parices]

Ready to listen again? Look at the bottom row of boxes. Find Box A. This time I am going to say problems like 9-6. The answer for 9-6 is 3. So there is a 3 in box A. Find box B. What is 4 - 2? 4 - 2 is 2. You write a 2 in box B.

[if recons pause--make sure the children are in the bottom row.]

Now I am going to say problems for the rest of the boxes. I will not stop, so write your answers quickly. If you can't think of an answer, leave the box empty. Ready?

Form U Box C 5 - 1 Box D Box E Box F 5 - 3 Box G 7 - 6 Box II 8 - 5 Box I 14 - 7 Box J 12 + 5

> Box L 13 - 7 Box M 12 - 9 Box N 15 - 8

Box K 11 - 8

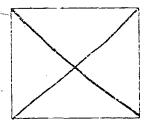
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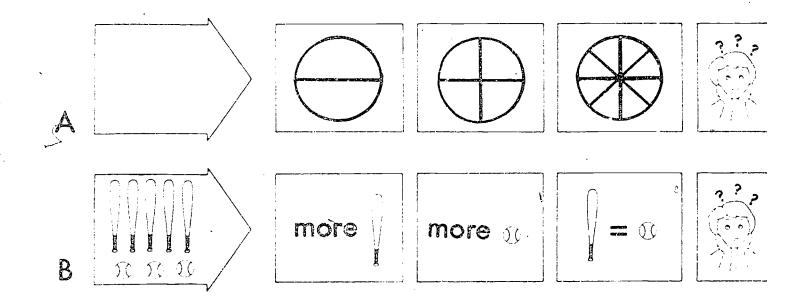
[Stop the tape.]

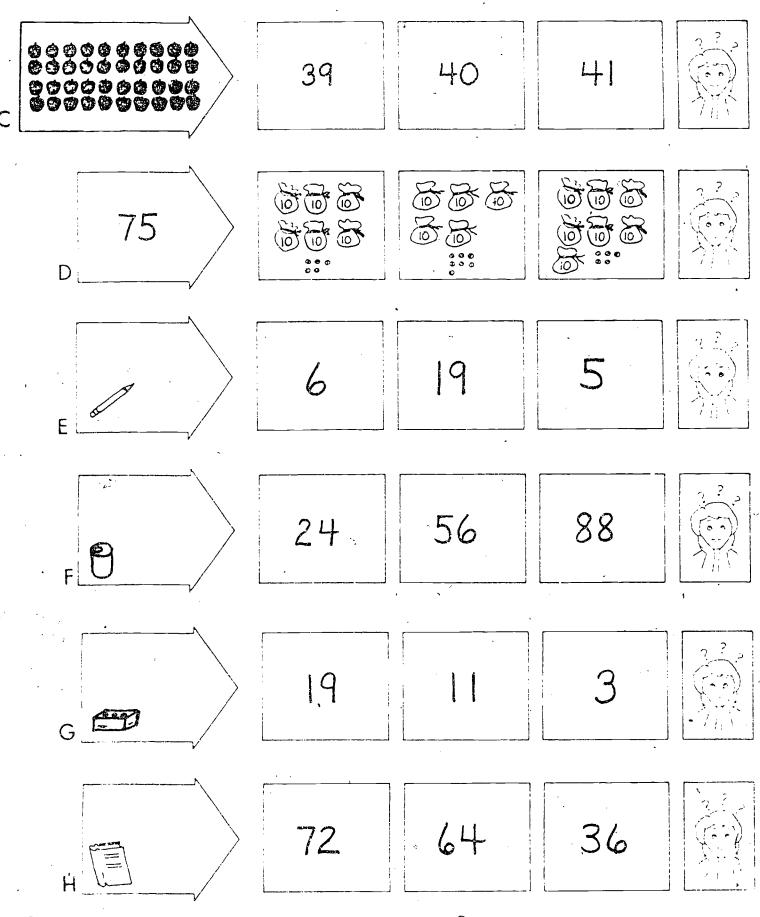
That is all the work we will do today. Remember, we will come again and you will do work like this again. Each time I come, you will be able to do more of the work.



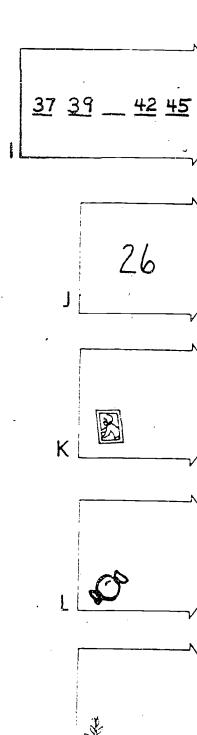
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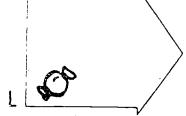
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2(10)+16

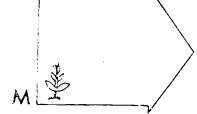




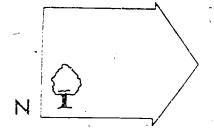




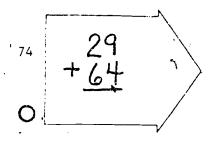












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Directions for Administering Achievement Monitoring Test V

Coordinated Study #1 & #2 \

General Directions

Reading the Test. The first part of this test is in multiple choice format and is read aloud to the children. Read the questions exactly as they are printed in the directions; do not paraphrase. Each question is read twice—or the key phrases are repeated after the priginal question is read. Read the questions at a conversational pace. The second part of the test involves verbal problems for which the child must write, but not solve, a number sentence. Again, you will read the number story twice. The third part of the test is timed and assesses the child's speed and accuracy using the addition and subtraction algorithms. The fourth segment, the basic facts speed test, is administered via tape.

Since many children will not know how to do the majority of the test, especially at the beginning of the year, they will no doubt want to ask, questions or want you to repeat items yet again. Please do not allow this—instead, ask them to answer "as best they can" or to mark the "puzzled face" to show they have "not learned this yet." Note also that reading the answers to the children is not permitted.

Since this is a group-administered test, verbal exchanges with individual children can be distracting and interfering-try to establish a policy of not talking and not allowing the children to talk in between questions.

Should the above directions seem unnecessarily stringent, please realize that we are attempting to measure change over time and that we have very few questions on which to base this measurement. The children will take the other forms of this same test at 6 week intervals and then they will repeat the three forms; hopefully each time they will be able to answer the questions more successfully.

Make sure the children mark only one box and that they mark at least one box. Encourage them to use the "puzzled face" by reminding them that this response means "I haven't learned this (how to do this) yet."

Pacing the Test. Try to keep the test moving. Expecially for the number story and algorithm problems it may take a "long" time for the children to figure out an answer. As a rule of thumb, allow the group to work on each question until only one or two children are still working. At that point, if necessary, suggest that anyone still working mark the "puzzled face" box. Then just go on to the next question without waiting longer. The second part of the test, sentence writing, may go slowly. Remind the children

2

not to solve the problem. The third part of the test is timed and must be administered accordingly.

The last section, the taped basic facts, is a speed test. Once the tape is started, it will not be stopped.

Estimated Administration Times

Part 1 10 min.

Part 2 .5 min.

Part 3 15 min.

Part 4 5 min.

Preparations for Testing.

The children will need two pencils with erasers. They will <u>not</u> need scratch paper for this test, since they will write in the "arrow" space. The children's names have been written on the tests in advance; distribute the tests, making sure each child has his/her own test.

Specific Directions

SAY: Today we are going to do some work with numbers in this booklet. You learned how to do some parts of the work last year in first grade. You will learn how to do more of the work this year in second grade. We don't expect you to know how to do all of the work today. We will come back again and again while you are in second grade... each time you will have learned how to do more of the work.

Find your name on the line. Look at the big box with an X in it-you will answer the questions today by making a big X like this one.

EXAMPLE A Now find row A. I am going to ask you a question. You will answer by making a big X in one of the boxes. If you haven't learned about the answer yet, make an X in the last box, the one with the puzzled face. [Pause.]

Which box has a triangle in it? Make an X on the box with a triangle in it. [Pause] If you haven't learned this yet, make an X on the box with the puzzled face. [Check to see that the children mark only one box in the row.]

EXAMPLE B Find Row B. Look at the numbers in the arrow. What number comes next?

Make an X on the number that comes next.

Now turn to the next page and fold your booklet.

[Note: Starting with row C, do not assist the children with the test, except to make sure they are marking only one box ... and at least one box.]

- C. Row C. Look at the sticks in the arrow. Make an X on the box that tells how many sticks there are ... the box that tells how many sticks there are. [Pause.] Remember, if you haven't learned about this yet, mark the puzzled face.
- D Row D. Make an X on the box that has 24 cubes in it ... 24 cubes in it.
- Row E. I am going to read a number story about toy airplanes. I will read the story twice. Listen both times before you mark a box. David has 9 toy airplanes. His sister Nancy has 13 toy airplanes. How many more toy airplanes does Nancy have than David? [Repeat. Allow time for the children to figure out their answers to rows E-H.]
- Row F. This number story is about bottle caps. For this story you may write on the paper if you want to. Tom has 24 old bottle caps. He also has 57 new bottle caps. How many bottle caps does Tom have altogether?

 [Repeat. If necessary, remind the children to "make an X" on their answer. Also, use the "puzzled face" reminder as necessary.]
- G Row G. This number story is about shells. 17 shells are in a box. Some shells are little. 8 are big. How many little shells are in the box? [Repeat.]
- H Row H. This number story is about soccer. For this story you may write on the paper if you want to. There were some soccer players on the field. 23 more players came. Now there are 35 players on the field. How many players were on the field at first? [Repeat. Use "puzzled face" and "make an X" reminders as necessary.]

Turn to the next page.

- I Row I. Which box shows the numbers in order from smallest to largest ... in order from smallest to largest?
- J Row J. Look at the little squares in the arrow. Make an X on the box that tells how many squares there are...how many squares there are.
- K Row K. Lool the number sentences. One of the number sentences tells how to find the answer for this story about hats. After I read the story, make an X on the number sentence that tells how to find the answer. Karla had 15 hats. She gave 9 hats to Steve. How many hats did Karla have left? [Repeat.]

- Row L. This number story is about stickers. Make an X on the number sentence that tells how to find the answer. Sarah has 28 stickers. Her brother Ricky has 34 stickers. How many more stickers does Ricky have than Sarah? [Repeat.]
- M Row M. This number story is about things to drink. There are 11 glasses on the table. 5 have brange juice in them. The rest have milk in them. How many glasses have milk in them? [Repeat.]
- N Row N. This number story is about children swimming. There were 46 children swimming in the pool. 27 more children jumped into the pool. How many children were in the pool then? [Repeat.]

Turn to the next page.

- Row 0. Look at the problem in the arrow. What number is the answer ... what number is the answer? [Mention 'write on paper' reminder]
- P Row P. Look at the problem in the arrow. What number is the answer ... what number is the answer?

Now we will do some different work. I will read a number story to you. Then I want you to write a number sentence for the story. You don't need to solve the sentence. Just write the sentence the best you can without solving it. Write it on the line.

- STORY A Judy has 4 chocolate cupcakes. She also has 7 white cupcakes. How many cupcakes does Judy have altogether? [Repeat.]
- STORY B Steve had 65 pennies. He gave 36 of them to Laura. How many pennies did Steve have left? [Repeat.]
- STORY & There are 86 marbles in a jar. 54 are big and the rest are little. How many little marbles are in the jar? [Repeat]
- STORY D Adam has 7 puzzles. How many more puzzles does he have to put with them so he has 12 puzzles altogether? [Repeat.]

[Give the children a short stand up-stretch-touch toes--and so on--"break" here.]
Turn to the next page, the one that says "ADD" at the top.

Be sure you have the page that says "ADD" on it. All the problems on this page are addition problems. Each problem has a letter by it ... A, B, C, D... all the way to V, W and X. When I say "GO", start with problem A, then do B, then C, and so on until I say "STOP!" If you can't do a problem, go on to the next one. Do as many problems as you can before I say "STOP!" Ready? GO! (Allow 6 minutes) STOP! You worked very hard on these problems. You will be learning how to do them faster. (Reassure the children as you see fit.) Now turn to the page that says "SUBTRACT."

Be sure you have the page that says "SUBTRACT." All the problems on this page are subtraction. When I say "GO," start with problem A, then do B, then C... do as many as you can before I say "STOP!" Ready? GO! (Allow 6 minutes.) I could tell you tried your best on these problems. You will be learning how to do them faster.

Now turn to the last page.

The work on this page is different. I want to see how quickly you can think of the answers for addition and subtraction problems.

I am going to play a tape—the voice on the tape will say problems, like this: [Play the four sample problems 2+8, 5+6, 7+4, 8+3.] The problems will go very quickly, even faster than when you were in first grade. Today you probably will not know very many answers, but when I come back and we do these problems again, you will know more. Don't feel bad if you don't know the answers today.

We will start with the row of boxes at the top of the page—the ones with capital letters A, B, C The voice on the tape will tell you where to write your answers. Do your best to keep up with the voice. Get your pencil ready. [Start tape.]

Script on Tape: Look at the row of boxes at the top of the page. Find box

A. I am going to say problems like 5+4. The answer for 5+4 is 9. So there is a 9 in box A. Find Box B. What is 7+1? 7+1 is 8. You

write an 8 in box B.

[10 second pause; make sure the children are working on the top row.]

Now I am going to say problems for all the rest of the boxes in the top
row. I will not stop, so write your answers quickly. If you can't think of

Box C Form V Box D Box E Box F 7 + 2 Box G Box H. 3 + 5 Box I Box J 3' + 7Box K 5 + 9Box M 8 + 7Box N

an answer, just leave the box empty. Ready?

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Stop working. You may rest for a moment...then we will work on the bottom row.

[10 second pause]

Ready to listen again? Look at the bottom row of boxes. Find Box A. This time I am going to say problems like 9 - 6. The answer for 9 - 6 is 3. So there is a 3 in box A. Find box B. What is 4 - 2? 4 - 2 is 2. You write a 2 in box B.

[10 second pause--make sure the children are in the bottom row.]

Now I am going to say problems for the rest of the boxes. I will not stop, so write your answers quickly. If you can't think of an answer, leave the box empty. Ready?

Form V

Box C 7 - 1

Box D 8 - 4

Box E 9 - 5

Box F 7 - 4

Box G 8 - 6

Box H 4 - 3

Box I 11 - 2

Box J 13 - 8

Box K 12 - 7

Box L 15 - 9

Box M 10 - 2

Box N 16 - 7

Stop working. Put your pencil down.

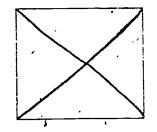
[Stop the tape.]

That is all the work we will do today. Remember, we will come again and you will do work like this again. Each time I come, you will be able to do more of the work.

[Collect the booklets.]

ID__ _ _ _ _ _ _ _

Name



B 10 11 12 _

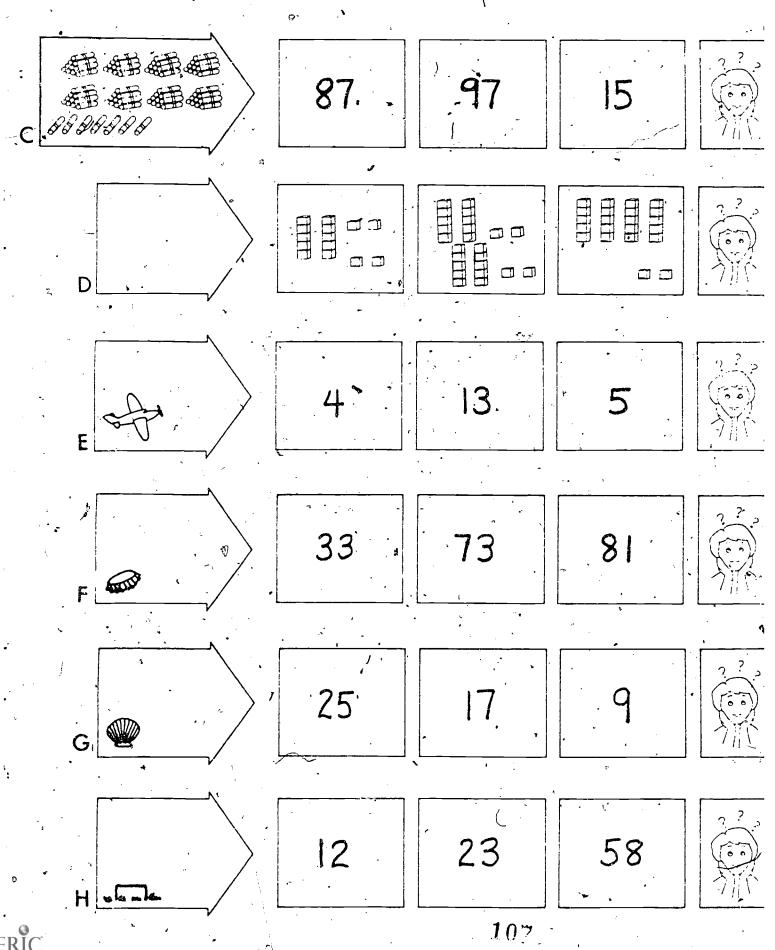
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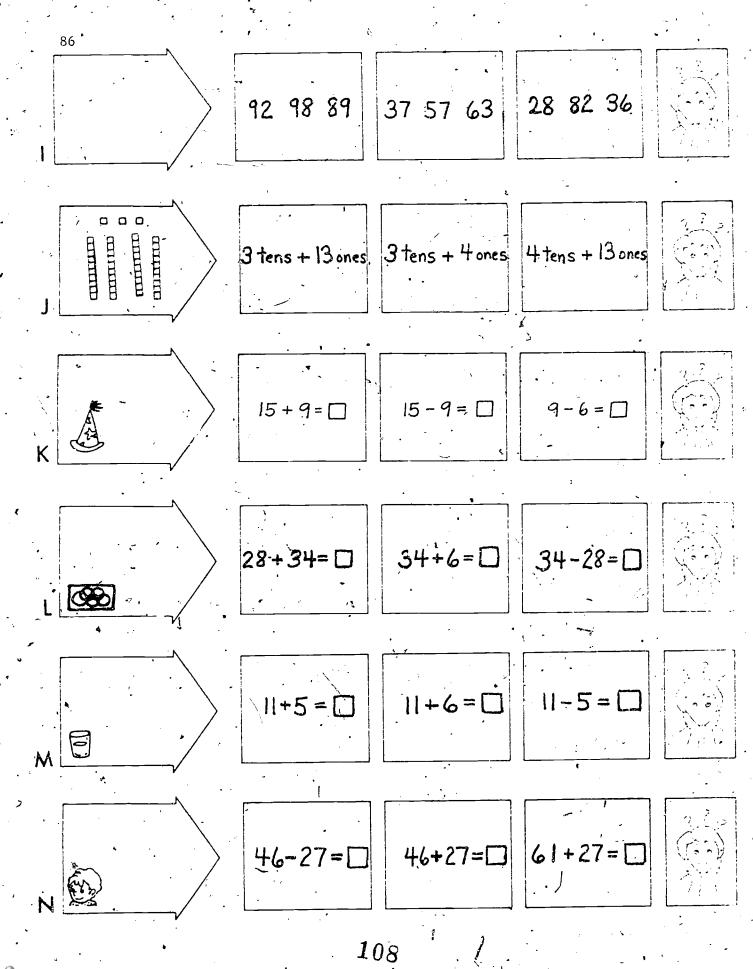
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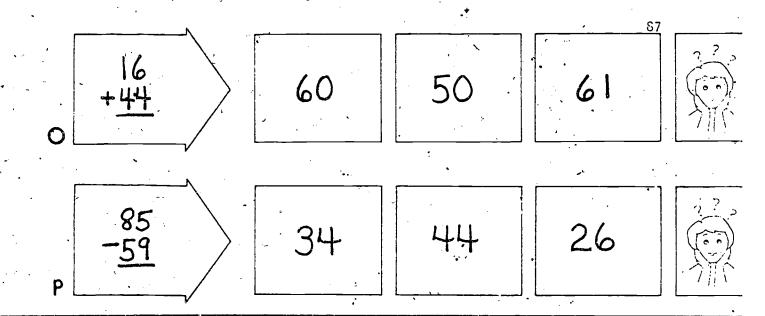


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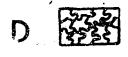




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Add

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Subtract

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3 D C d e f g h i j k l m n

113

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ERIC Full Text Provided by ERIC



Directions for Administering Achievement Monitoring Test W

Coordinated Study #1 & #2

General Directions

Reading the Test. The first part of this test is in multiple choice format and is read aloud to the children. Read the questions exactly as they are printed in the directions; do not paraphrase. Each question is read twice—or the key phrases are repeated after the original question is read. Read the questions at a conversational pace. The second part of the test involves verbal problems for which the child must write, but not solve, a number sentence. Again, you will read the number story twice. The third part of the test is timed and assesses the child's speed and accuracy using the addition and subtraction algorithms. The fourth segment, the basic facts speed test, is administered via tape.

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Since this is a group-administered test, verbal, exchanges with individual enclorer can be distracting and interfering—try to establish a policy of not talking and not allowing the children to talk in between questions.

Should the above directions seem unnecessarily stringent, please realize that we are attempting to measure change over time and that we have very few questions on which to base this measurement. The children will take the other forms of this same test at 6 week intervals and then they will repeat the three forms; hopefully each time they will be able to answer the questions more successfully.

Make sure the children mark only one box and that they mark at least one box. Encourage them to use the "puzzled face" by reminding them that this response means "I haven't learned this (how to do this) yet."

Pacing the Test. Try to keep the test moving. Expecially for the number story and algorithm problems it may take a "long" time for the children to figure out an answer. As a rule of thumb, allow the group to work on each question until only one or two children are still working. At that point, if necessary, suggest that anyone still working mark the "puzzled face" box. Then just go on to the next question without waiting longer. The second part of the test, sentence writing, may go slowly. Remind the children

not to solve the problem. The third part of the test is timed and must be administered accordingly.

The last section, the taped basic facts, is a speed test. Once the tape is started, it will not be stopped.

Estimated Administration Times

Part 1, 10 min.

Part 2 5 min.

Part 3 15 min.

Part 4 \5 min.

Preparations for Testing.

The children will need two pencils with erasers. They will not need scratch paper for this test, since they will write in the "arrow" space. The children's names have been written on the tests in advance; distribute the tests, making sure each child has his/her own test.

Specific Directions

SAY: Today we are going to do some work with numbers in this booklet. You learned how to do <u>some</u> parts of the work last year in first grade. You will learn how to do <u>more</u> of the work this year in second grade. We don't expect you to know how to do all of the work today. We will come back again and again while you are in second grade . . . each time you will have learned how to do more of the work.

Find your name on the line. Look at the big box with an X in it-you will answer the questions today by making a big X like this one.

XAMPLE A Now find row A. I am going to ask you a question. You will answer by making a big X in one of the boxes. If you haven't learned about the answer yet, make an X in the last box, the one with the puzzled face. [Pause.]

Look at the boxes with the black and white dots in them. Which box has the most black dots? Make an X on the box with the most black dots. [Pause] If you haven't learned this yet, make an X on the box with the puzzled face. [Check t see that the children mark only one box in the row.]

XAMPLE B Find Row B. Look at the numbers in the arrow. Which box has the numbers in order from largest to smallest? Make an X on the box with the numbers in order from largest to smallest.

Now turn to the next page and fold your booklet.

[Note: Starting with row C, do not assist the children with the test except to make sure they are marking only one box and at least one box.]



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- Row C. Make an X on the box that has a seventy-four in it ... make an X on the box that has a seventy-four in it. [Pause.] If you haven't learned about this yet, mark the puzzled face.
- D Row D. Look at the number in the arrow. Make an X on the box that has that many stars in it ... make an X on the box that has that many stars in it.
- E Row E. I am going to read a number story about fish. I will read the story twice. Listen both times before you mark a box. Judy has a little fish. She also has 9 big fish. How many fish does Judy have altogether? [Repeat. Allow time for the children to figure cut their answers to rows E-H.]
- Row F. This number story is about comics. For this story, you may write on the paper if you want to. Paul had 43 comics. He gave 28 comics to Carol. How many comics did Paul have left? [Repeat and give "puzzled face" reminder if necessary to move the test along.

 You also might need to remind children to "make an X" on their answer.]
- Row G. This number story is about tickets. First Julie bought 7 tickets to ride on the roller coaster. Then she bought 4 more tickets to ride on the ferris wheel. How many tickets did Julie buy? [Repeat.]
- Row H. This story is about a dog's leash. For this story you may write on the paper if you want to. The dog's leash is 75 links long. A part of the leash 47 links long is around a tree. The rest of the leash is not. How long is the part that is not around a tree? [Repeat. Remind about "puzzled face" and "make an X on answer" as necessary.]

 Turn to the next page.
- Row I. Look at the three purses. Which purse has the <u>least</u> amount of money in it ... the <u>least</u> amount of money?
- J Row J. Look at the numbers in the arrow. Make an X on the box that means the same as the numbers in the arrow...that means the same as the numbers in the arrow.
- K 'Row K. Look at the number sentences. One of the number sentences tells how to find the answer for this story about keys. After I read the story, make an X on the number sentence that tells how to find the answer. Sally has 8 keys. Her brother Mike has 14 keys. How many more keys does Mike have than Sally? [Repeat.]
- Row L. This number story is about beads. After I read the story, make an X on the number sentence, that tells how to find the answer. Jack has 16 red beads. He also has 56 green beads. How many beads does Jack have altogether? [Repeat.]
- Row M. This number story is about links. Mark the number sentence that tells how to find the answer. Patty made a chain of links. She used 3 links first. Then she used 8 more links. How many links long is her chain? [Repeat.]
- N Row N. This number story is about marbles. On Tuesday Melinda won 31 marbles. On Wednesday she won some more marbles. She won 64 marbles altogether. How many marbles did she win on Wednesday?

 [Repeat.]

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94 Turn to the next page.

Row 0. Look at the problem in the arrow. What number is the answer what number is the answer? [Mention "write on paper" reminder]

P Row P. Look at the problem in the arrow. What number is the answer .. what number is the answer?

Now we will do some different work. I will read a number story to you. Then I want you to write a number sentence for the story. You don't need to solve the sentence. Just write the sentence the best you can without solving it. Write it on the line.

STORY A Jenny had 13 balloons. She gave 9 balloons to Ben. How many balloons did Jenny have left? [Repeat.]

STORY B Mark has 16 crayons. His sister Pam has 58 crayons. How many more crayons does Pam have than Mark? [Repeat]

STORY C Jean had 26 bottle caps. Her mother gave her 37 more bottle caps. How many bottle caps did Jean have altogether? [Repeat]

STORY D There are 11 trucks in the sandbox. 8 are big and the rest are little.

How many little trucks are in the sandbox? [Repeat.]

[Give the children a short stand up-stretch-touch toes--and so on--"break here.]
Turn to the next page, the one that says 'ADD' at the top.

Be sure you have the page that says "ADD" on it. All the problems on this page are addition problems. Each problem has a letter by it ... A, B, C, D... all the way to V, W and X. When I say "GO", start with problem A, then do B, then C, and so on until I say "STOP!" If you can't do a problem, go on to the next one. Do as many problems as you can before I say "STOP!" Ready? GO! (Allow 6 minutes) STOP! You worked very hard on these problems. You will be learning how to do them faster. (Reassure the children as you see fit.) Now turn to the page that says "SUBTRACT."

Be sure you have the page that says "SUBTRACT." All the problems on this page are subtraction. When I say "GO," start with problem A, then do B, then C... do as many as you can before I say "STOP!" Ready? GO! (Allow 6 minutes.) I could tell you tried your best on these problems. You will be learning how to do them faster.

Now turn to the last page.

The work on this page is different. I want to see how quickly you can think of the answers for addition and subtraction problems.

I am going to play a tape-the voice on the tape will say problems, like this: [Play the four sample problems 2+8, 5+6, 7+4, 8+3.] The problems will go very quickly, even faster than when you were in first grade. Today you probably will not know very many answers, but when I come back and we do these problems again, you will know more. Don't feel bad if you don't know the answers today.

We will start with the row of boxes at the top of the page—the ones with capital letters A, B, C The voice on the tape will tell you where to write your answers. Do your best to keep up with the voice. Get your pencil ready. [Start tape.]

Script on Tape: Look at the row of boxes at the top of the page. Find box A. I am going to say problems like 5 + 4. The answer for 5 + 4 is 9. So there is a 9 in box A. Find Box B. What is 7 + 1? 7 + 1 is 8. You write an 8 in box B.

[10 second pause; make sure the children are working on the top row.]

Now I am going to say problems for all the rest of the boxes in the top
row. I will not stop, so write answers quickly. If you can't think of
an answer, just leave the box empty. Ready?

			14		•	
Form	W	• .		Box C	2 + 4	
		•		Box D	6 + 3	
	7	3		Box E	5 + 2	
			·	Box F	2 + 3	
			क ँ	Box G	5 + 0	
4	-			Box H	1 + 3	
			Box I	9 + .2		
٥		* 6		Box J	6 + 6	
•	•		53	Box K	4 + 7	
				Box L	7 + 6	
		•	. ,	Box M	9 + 7	
					_	

Box N

W

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Stop working. You may rest for a moment...then we will work on the bottom row.
[10 second pause]

Ready to listen again? Look at the bottom row of boxes. Find Box A. This time I am going to say problems like 9 - 6. The answer for 9 - 6 is 3. So there is a 3 in box A. Find box B. What is 4 - 2? 4 - 2 is 2. You write a 2 in box B.

[10 second pause--make sure the children are in the bottom row.]

Now I am going to say problems for the rest of the boxes. I will not stop, so write your answers quickly. If you can't think of an answer, leave the box empty. Ready?

Form W

Box C $^{1}3 - 2$

Box D 6 - 4

Box E 9 - 1

Box F 7-3

Box G 6 - 1

Box H 7 - 5

Box I 10 - 4

Box J 13 - 9

Box K 14 - 8

Box L 11 - 7

Box M 12 - 4

Box N 17 - 9

Stop working. Put your pencil down.

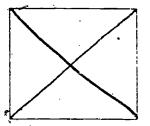
[Stop the tape.]

That is all the work we will do today. Remember, we will come again and you will do work like this again. Each time I come, you will be able to do more of the work.

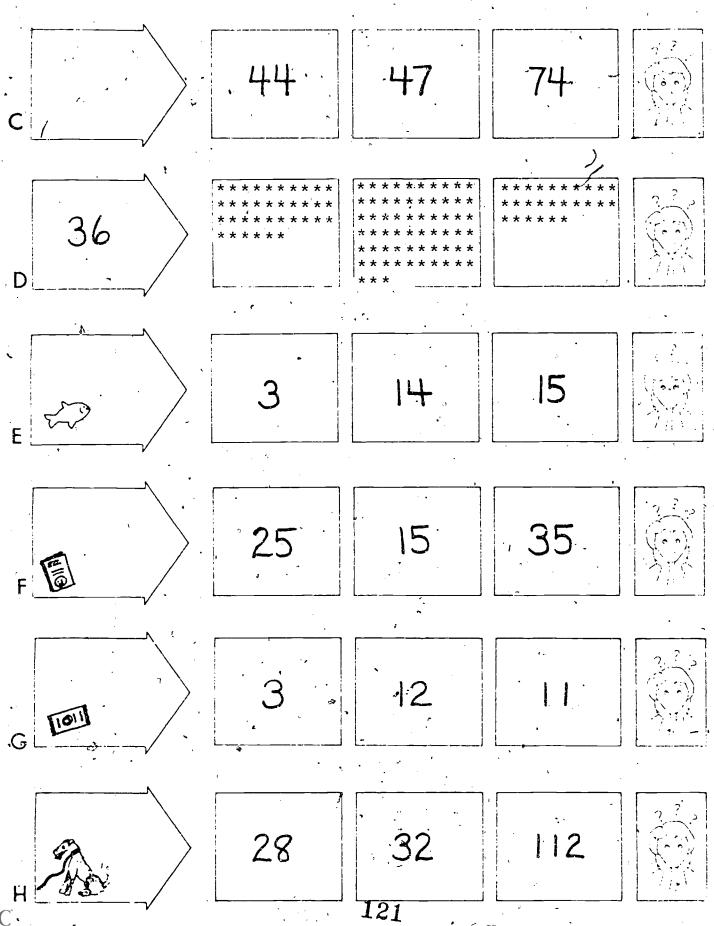
[Collect the booklets.]

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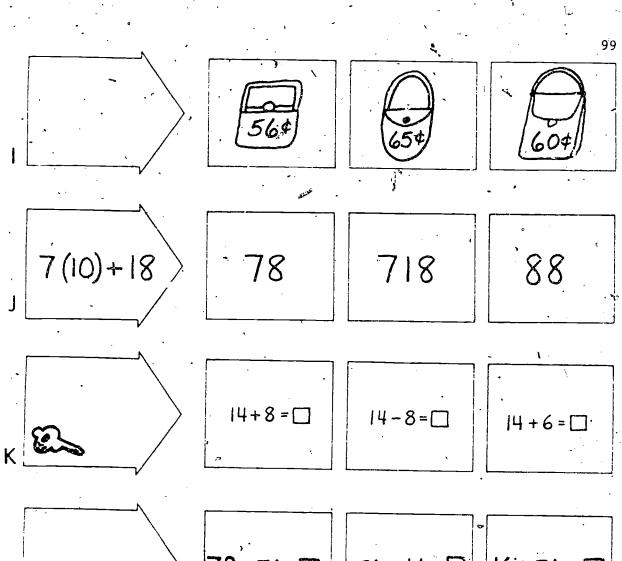
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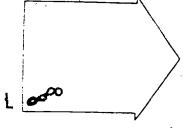


A 9,3,7 9,7,3 3,9,7 B 7

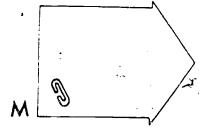


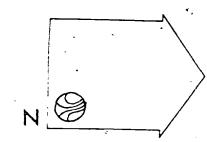
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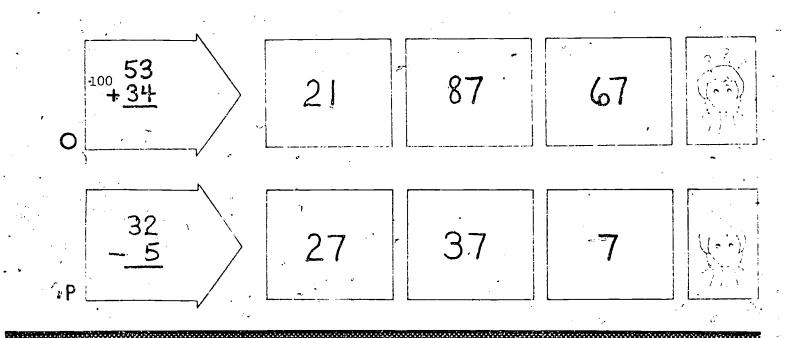


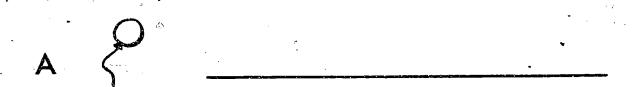












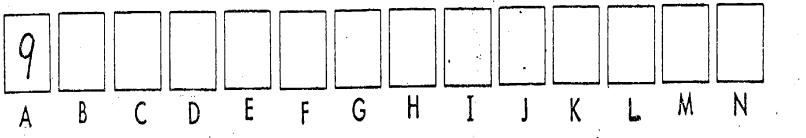
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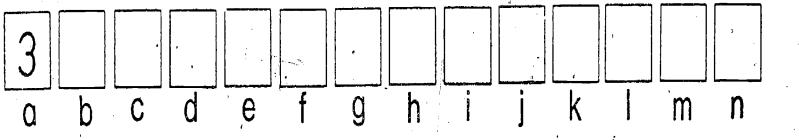
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Subtract







Appendix B.

ITEM STATISTICS FOR FORMS U, V, W
FOR THE TOTAL POPULATION

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· ITEM N	UHRER 2					COEFFI	CIENTS	OF CORRE	; Lation		ME	ANS	
	OPTION	WT	N	P		PB=ST	PB+TT	. 8 - ST	8-11		\$T	TT	
	0 C 1 2 Total	0 1 2	0 31 0 31	.0 100.0 .0	¢	.00 .00	•00 •00	.00	.00 .00	C	.00 2,97	.00 47.35 .00	Sentence Writing Add-part part whole 0-99
ITEM N	UMBER 3					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
	OPTION	WT	N	P		PB=ST	PB-TT	8-57	8-11		ST	TŢ	
•	C 1 2 TOTAL	0 1 0	2 14 15 31	6,5 45,2 48,4	C	13 .93 87	19 .52 43	26 1.17 -1.09	-,36 ,65 -,53	C	2,50 3,93 2,13	38,50 54,50 41,87	Sentence Writing Subt-join-addend 0-99
/· ITEM N	UMRER 4	-	r	A e	•	COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
•	OPTION	WT	N	, P,		PB=ST	P8=T7	B=ST	Bett		ST	77	
	0, C 1 2 TOTAL	0 1 0	0 31 0 31	.0	C	.00 .00 .00	.00 .00	.00 .00	.00 .00	C	.00 10,9 00	.00 47.35 .00	Sentence Writing Add-simple joining 11-15

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TEST NO 1 ACHIEVEMENT MONITORING 7U

SUBTEST 3 ADDITION FACTS

ITEM NUMBER 1	,	•			COEFF	ICIENTS	OF CORREL	.ATION		ME	ANS	ITEM DESCRIPTIONS	;
OPTION	Тų	N	P		PB-ST	P8-YT	B-ST	B+TT		SŢ	T7 •		
. 0	0	1	: 3.2		-,42	-,27	+1,024	66		4.00	29.00	• .	
C 1	1.	30,	96.8	Ċ	.42	.27	.81	.52	C	9,97	47:97	_	
à	Õ	0	.0	•	.00	.00	.00	.00	٧	•00	· -	1+5	,
TOTAL	·	31	•			•••	,,,,	***		•••	, 00		
ITEM NUMBER 2					COEFF	CIENTS	of Correl	.ATION	٠	ME	- ANS		
					•		,			•	•	·	
OPTION .	WT	N	P ,		PB-ST	PB-TT	B - ST	Butt		ST	11	•	
0	0	2	6,5		44	-,24	87	7.47		5,50	36.00		
C 1	1,	29	93,5	C	.44	.24	.78	.42	C	10.07	48,14	3 + 2	
5	0	0	.0		•00	00	.00	.00	•	,00	.00	J , Z	
TOTAL	•	31	•			,,***	•••	***			100	• .	
		¢								•		ř	
ITEM NUMBER 3					COEFFI	CIENTS	OF CORREL	ATION		, ME	ANS	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
OPTION	WT.	N	P		PB-ST	PB=TT.	B=ST	8-11		ST	TT		•
. 0	0 ,	1	. 3,2		- 43		1 42	- 44	•	4.00	20.44	`•	
C i	1	_		٨	,42	•,27	=1.02	• 66		4,00	29,00		
. 2	0	29	93,5	U	,55	.37	.97	.64	Ü	10,14	48.55	4+4	
TOTAL	V	1	3,2		•• 35	-,24	85, ب	-,5 9		5.00	31.00		
TOTAL		31	4	•			,	•					
•													
ITEM NUMBER 4	г				COEFFI	CIENTS (OF CORREL	ATION		ME	ANS	, ° ,	
OPTION	WT	N	P		PB-ST	P8=TT	8=\$7	BeTT		ST	77	6	•
0	, 0	1	3.2		-,35	≈,24	-,85	· a ,59	•	5,00	31.00	•	
· C 1		28	90.3	C	.40	,36	.66	,59	Ĉ	10,11	48,82	3 + 6'	
á	-0	. 5	6,5	•	0.24	≈,26	0,46	-,51	٠,	7,50	35,00	3 + 0	
TOTAL		31	- • •			- 70"	,	,			-0100	<i>t</i>	
	1	•••				, ,		•			· · · · · · · · · · · · · · · · · · ·		
ITEM NUMBER 5					COEFFI	CIENTS (F CORREL	ATION		ME	ANS	•	
OPTION	HT	N .	P		P8=ST	PB-TT	8-57	B=TT		ST .	¥	,	,
0	٥	2	6,5		·#+50	-,32	•,97	·•,63		= ,00	32,00	. •	
, Ci	1	29	93.5	c ·	•50	,32	.87	.57	Ĉ				
2	. 0	0	•0	•	.00		.00		٠.	•	48.41	4 + 3	
TOTAL	٨	. 31	40		• • •	, •00	₹ VV	.00		•00	•00		
INIME		. 31					•			•			

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TEST NO 1 ACH	IEVEMENT	HONITO	RING TÚ	۸.	;	t » *	• (•	\$VBTES	T , 3	ADDIŤI	ON FACTS		٩	
TEM NUMBER 6		_			CÓEFFI	CIENTS	OF	CORREL	,ATION	•	ME,	ANS	•	, , , , , , , , , , , , , , , , , , ,	· }
OPTION	NT	N.	Р		PB-ST	PB+TT		B-ST	BejT		\$T	11	· · · · ·		•
c 1 2	0.	0 30'	.0 96.8 3.2	C .	.00 .27 .27	.00 .15	•	,00 ,53 -,67	.00 .29 37	c ²	9.90 6.00	.00 47.70 37.00	»(**	6 + 2	
TOTAL	,	31 		•	· ·	, , , , , , , , , , , , , , , , , , ,	,	, 1	2				,	, X	
ITEM NUMBER 7			'i	,	COEFFI	CIENTS	OF.	CORREL	ATION		ME	ANS		•	
OPTION	ĦŤ.	N	P		PB#ST	P8-TT		B-ST \$	B-TT	•	SŤ	11	,		
C 1 0	0 6 1 0	, 10 19	32.3 61.3 6.5	C	/76 	47 .36 .18		.98 .16	61 .45 .35	C	7.00 11.32 9.00	38.90 50.89 56.00	·	5 + 8	·.
TOTAL		31	1					•							٠
ITEM NUMBER P	. ,	•		· '	COEFFI	CIENTS	OF	CORREL	NOLTA		ME	ANS		4	
OPTION	WT	N	P		PB=ST	.P8=TT		B-ST	8-11		ST	TT			
C 1	0	9 21 1	29.0 67.7 3.2	¢	73 .78 20	50 .57 22		97 1.02 49	•.67 •.75 •.55	C	6.89 11.14 7.00	37.56 52.29 32.00	•	6 + 9	
TOTAL	e	31						•		•	\			. •	
ITEM NUMBER a		, ,			COEFFI	CIENTS	OF	CORREL	NOLTA		MÉ	ANS	•	·	٠
OPTION	WT '	N	, b	•	PeoST	P8-77.		8-51	8-77		ST	17			
C 1 0	0 1< 0	3 28 0	9.7 90.3 .0	C	14 14 00	-,29 ,29;		•,25 ,23 ,00	•.50 .47 .00	C		36,33 48.54 ,00		9 + 3	
TOTAL	,	31	~	•		•		•	1			•			
ITEM NUMBER 10			•		COEFFI	CIENTS	OF	CORREL	ATION		ME	ANS .			
OPTION	WT	N	p		PB-ST	P9-TT		BoST	.B=TT	•	ST	TT			
141	0 1, 0	11 18 2	35.5 58.1 6.5	C	••71 •78 ••18	•,55 ,62 •,18		-,91 ,98 -,36	•.71 .78 •.34	C .	7:36 - 11:44 8:00	38.09 53,94 39.00	•	5 + 7	
TITE TOTAL	ę,	31											-	'	

	TEST	NO	1	ACHIEVEHENT	MONITORING	TU.
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SUBTEST 3 ADDITION FACTS

1531	NU I AL	'u î c Arucu	, munito			3		20162)	*0011	ION PROIS	١	
ITEM	NUMBER 11	l	.)	13	COEFFI	CIENTS	OF CORRE	LATION		ME	EANS :		
	OPTION	ı NT	N	P	PB=ST	PB=TT	B+ST	B≖TŤ		\$1	TT	4	
	. () 0	9	29,0 -	-,79	a,39	-1.04	52		6,67	39,67		Þ
	C	1	21	67,7 #C	,79	,46	1.02	,60	C	11.14	51,33		8 + 9
		9 0	1	3,2	-,06	-,21	0,14	0,51		9,00	33.00		
	TOTAL	. ;	31			,							
	-												
ITEM	Numper 1	?		,	COEFF	CIENTS	OF CORRE	LATION		· M	ANS		
	OPTIO	TH V	N	P	#B-\$1	P8-TT	8-51	8-77		51	11	, '	
	ĺ) 0	7	22.6	-,69	•,37	-,95	-,5 1	•	6,57	38,86		
	C	1 1	51	67.7 C	,81	.37	1,06	.49	C	11.19	50.57		3 + 8
	i	0	3	9.7	32	-,07	•,55	•.12		7.33	44.67		`
,	TOTAL	•	31				,						

TEST N	0 1 ACH1	(EVÉMENT	F MONITO	RING TU				SUBTES	ST _. 4	SUBTRA	CTION FACT	'S	•	
ITEM-N	UMBER 1				COEFF	CIENTS	OF CORRE	LATION	,	ı Me	ANS	ITE	M DESCRIPTIONS	
,	OPTION	WT	N	P	PB-ST	PB-TT	B-ST	B=TT		ST	, 17	. 1	,	
	ð	0	0	•0	.00	.00	.00	.00		.00	•00		\	
	ci	1	31	100.0 C	,00	.00	. ,00		C	8,32	47.35		5 - 1	
	Ž	ō	0	,0	.00	.00	,00	.00		,00	,00		ı	
	TOTAL		31		,	•••	*	,	•		***			
TTEM N	UMPER 2				^^FFF	OTENTO	AT CADD	I ATTOM		Це	ANS			
1120 W	Auteu S				ÇUEFFI	(ATEMI2	OF CORRE	PATION		m E	,ANJ		0	
	OPTION	WT	N	p ,	PB=\$T	PB-TT	B=ST	. B=TT		ST	77 -			
.,	n ·	0	1 1	3.2	-,19	•,17	-,47	-,41		6,00	36,00	4		
	C, 1	1	29	93,5 C	.04	.12	.07	.22	¢	8,34	47,76		9 - 2	
		. 0	1	3,2	.14	-,01	,34	•.01	•	10.00	47.00		, - 2	
	TOTAL		31	9		•	·	ı)	• • • •		•	
ţ				1						1				
ITEM N	UMBER 3		•		COEFFI	CIENTS	OF CORRE	LATION		ME	ANS &			
* .	OPTION	WT	N ·	P	P B ≈5T	P8-TT	B=ST	8-17		ST	11		•	4
	- 0	0	1	3,2	36	-,22	87	•.55		4.00	32,00			
	C 1	1	29	93,5 C	.39	.35		.62	C	8,55	48.52	,	8 - 7	
	2	0	j	3,2	19	-,27	-,47	-,66		6,00	29,00			
1	TOTAL		31				,			,				
ITEM' N	JMSER 4		·		COFFFT	CIENTS	OF CORRE	, LATTON		ME	ANS			
• • • • • • • • • • • • • • • • • • • •		_												
	OPTION	WT	Ν.	P. C.	PB-ST	P8-TT	B=ST	0 - †¶		\$7	77			
	0	٥.	1	3,2	-,27	•,22	-,67	•,55		5.00	32.00	•		
	C 1	ì	29	93.5 C	, 39	,27	.69	.48	C	8,55	48,24			
	ž	Ō	1	3.2	-,27	15	-,67	• 37	•	5,00	37.00	*	5 - 3	
	TOTAL	•	31		• • • •	,,	-10.	•••		-,,,,				
Ĩ	,		**		r.	•		•			•			
ITEM N	JHBER 4	f	Ċ		COEFFI	CIENTS	OF CORRE	LATION		ME	ANS			
	OPTION	WT	N	P	PB=ST	`PB=TT	B-ST	8-77		ST	TT	•	•	
1	, 0	0	0	• 0	.00	,00	.00	,00		.00	,00			
	6 1	į.	31	100.0 C	.00	.00	.00	.00	C	8.32	47,35		, ,	
	į 2	Ö	٥.	.0	.00	.00	.00	.00	•	,00	.00		7 - 6.	
45	TOTAL	-	0 31	• •	, •••	104	,.,	, , ,		***	, , ,			
スレ	14104			,		•								

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TEST NO 1. ACMIEVEMENT MONITORING TO SUBTEST 4 SUBTRACTION FACTS ITEM NUMBER 6 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 3 9,7 -,49 +,39 -,35 -,68 5,60 32,33 C 1 1 35 80,6 C .59 ,49 ,33 .70 C 8,96 50,35 8-5 TOTAL 31 ITEM NUMBER 7 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 0 8 25,8 -,52 -,31 -,70 -,42 6,37 40,75 C 1 1 22 71,0 C .51 ,36 ,67 ,48 C 9,65 50,23 14-7 C 1 1 22 71,0 C .51 ,36 ,67 ,48 C 9,65 50,23 14-7 TOTAL 31 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT .5T TT 0 0 10 10 32,3 -,60 -,22 -,78 -,29 ,37 C 9,50 50,44 12-3 TOTAL 31 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT .5T TT 0 0 10 32,3 -,60 -,22 -,78 -,29 .37 C 9,50 50,44 12-3 TOTAL 31 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT .5T TT 0 0 1 10 14,3 -,60 -,22 -,78 -,29 .37 C 9,50 50,44 12-3 TOTAL 31 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT .5T TT 0 0 1 13 41,9 -,65 -,42 -,83 -,53 -,64 41,23 TOTAL 31 ITEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT .5T TT 0 0 1 17 54,6 -,11 -,15 -,15 -,15 -,15 -,15 -,15 -,15	f and the					• • • • • • • • • • • • • • • • • • • •								
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 0 3 9,7 -,49 -,39 -,85 -,86 5,08 5,08 32,33 2 0 0 1 1 25 8,06 C ,59 ,49 ,83 .70 C 8,96 50,36 8-5 TOTAL 31 ITEM NUMBER 7 COEFFICIENTS OF CORRELATION MEANS OPTION NT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 0 8 25,8 -,52 -,31 -,70 -,42 6,37 40,75 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	TEST NO 1 - ACH	IEVEHEN	IT MONITO	RING TU				•	SUBTE	ST 4	SUBTR	ACTION FA	CTS	
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 0 3 9,7 -,49 -,39 -,85 -,86 5,08 5,08 32,33 2 0 0 1 1 25 8,06 C ,59 ,49 ,83 .70 C 8,96 50,36 8-5 TOTAL 31 ITEM NUMBER 7 COEFFICIENTS OF CORRELATION MEANS OPTION NT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 0 8 25,8 -,52 -,31 -,70 -,42 6,37 40,75 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7				,								٠		
OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 0 3 9.749398568 5.00 32.33 C 1 1 35 80.6 C .59 .49 .83 .70 C 8.96 50.35 8-5 TOTAL 31 ITEM NUMBER 7 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 8 25.852317042 6.37 0.75 50.23 14-7 C 1 1 22 71.0 C .51 .36 .67 .48 C 9.05 50.23 14-7 TOTAL 31 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT .ST TT 0 0 10 32.360227829 5.40 43.30 0.37.00 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT .ST TT 0 0 10 32.360227829 5.40 43.30 12-5 TOTAL 31 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 10 32.360227823 7.67 42.33 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 10 44 12.910131723 7.67 42.33 ITEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 13 41.965428353 6.62 41.23 7.25 41.75 TOTAL 31 ITEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 17 56.819173028 7.25 41.75 11-8 OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 1TEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT O 0 17 56.81919173028 7.25 41.75 11-8 OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT O 0 17 56.851356444 7.29 43.41 11-8 OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT O 0 17 56.851356444 7.29 43.41 11-8 OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT O 0 17 56.851356444 7.29 43.41 11-8 OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT	ITEH NUMBER 6				,	COEFF	ICIENTS	OF CORRE	LATION		· M	LANS		
C 1 1 25 80.6 C .59 .49 .83 .70 C 8.96 50.36 8-5 TOTAL 31 9.729265145 6.33 37.33 8-5 TOTAL 31	OPTION	WT	, , N	. P				: B=ST	0=TT		ST	77		
C 1 25 80,6 C .59 .49 .83 .70 C 8,96 50,36 8-5 2	0	0	3	9.7		49	39	85	•.68		√. ≸.0Λ	32 22		
TOTAL 31 9,7 -,29 -,26 -,51 -,45 6,33 37,33 7,33 7,00 ITEM NUMBER 7	C 1	1			C									0 .
TOTAL 31 ITEM NUMBER 7 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 8 25,8 -6,52 -31 -,70 -,42 6,37 40,75 50,23 14-7 C 1 1 22 71.0 C .51 ,36 .67 ,48 C 9,05 50,23 14-7 TOTAL 31 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT .5T TT 0 0 0 10 32,3 -,60 -,22 -,78 -,29 6,40 43,30 12-5 C 1 1 16 58:1 C .62 ,29 ,79 ,37 C 9,55 50,44 12-5 TOTAL 31 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 0 13 41,9 -,65 -,42 -,83 -,53 6,62 41,23 11-8 C 1 1 14 45:2 C .77 .53 .97 .67 C 10,21 54,64 11-8 TOTAL 31 ITEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 0 13 41,9 -,65 -,42 -,83 -,53 6,62 41,23 11-8 TOTAL 31 ITEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 0 17 54,8 -,19 -,17 -,30 -,28 7,25 41,75 11-8 OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 0 17 54,8 -,19 -,17 -,30 -,28 7,25 41,75 11-8 OPTION WT N P PB-ST PB-TT B-ST B-ST ST TT 0 0 0 17 54,8 -,51 -,35 -,64 -,44 7,29 43,41 15-7 20 5161 1.95 2,05 .68 46,00 15-15 5,60 46,00 13-7	5	0		9.7							•	-		0 ~)
OPTION WT N P PB-ST PB-TT 9-ST B-TT ST TT 0 0 0 8 25.852317042 6.37 40.75 C 1 1 22 71.0 C .51 .36 .67 .48 C 9.05 50.23 14-7 2 0 1 3.203150637 8.00 .37.00 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT .5T TT 0 0 10 32.360227829 6.40 43.30 C 1 1 16 55.1 C .62 .29 .79 .37 C 9.50 50.44 12-5 TOTAL 31 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 13 41.910131723 7.67 42.33 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 13 41.965428353 6.62 41.23 C 1 1 14 45.2 C .77 .53 .97 .67 C 10.21 54.64 11-8 TOTAL 31 ITEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT O 0 17 56.851356444 T.29 43.41 C 1 1 9 29.0 C .52 .42 .68 .56 C 10.11 55.56 13-7 C 1 1 19 29.0 C .52 .42 .68 .56 C 10.11 55.56 13-7		,	31			N.					·	,		, ,
OPTION HT N P PB-ST PB-TT 9-ST B-TT ST TT 0 0 0 8 25.852317042 6.37 40.75 C 1 1 22 71.0 C .51 .36 .67 .48 C 9.05 50.23 14-7 2 0 1 3.203150637 8.00 .37.00 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT .5T TT 0 0 10 32.360227829 5.40 43.30 C 1 1 18 55.1 C .62 .29 .79 .37 C 9.50 50.44 12-5 2 0 3 9.710131723 7.67 42.33 ITEM NUMBER 9 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 13 41.965428353 6.62 41.23 C 1 1 14 45.2 C .77 .53 .97 .67 C 10.21 54.64 11-8 TOTAL 31 ITEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 13 41.91917 .3028 T.25 41.75 TOTAL 31 ITEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 17 56.851356444 T.29 43.41 C 1 1 9 29.0 C .52 .42 .68 .56 C 10.11 55.56 13-7 C 0 5 16.1 .0505 .0607 8.50 46.00	ITEM NUMBER 7		•			COEFF	ICIENTS	OF CORRE	LATION		M	FANS		
14-7 14-7	A07+04			_	÷						• • •	, 1,112		
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OPTION WT N P		Ų		3.2		03	-,15	••06	• , 37		B.00	. 37.00		
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2 0 4 12.919173028 7.25 61.75 TOTAL 31 ITEM NUMBER 10 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 17 54.8516444 7.29 43.41 C 1 1 9 29.0 C .52 .42 .68 .56 C 10.11 55.56 13-7 2 0 5 16.1 .0505 .0807 8.60 46.00				45.2	Ç	. ,77		•						11 - 8
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 17 54.851556444 .7.29 43.41 C 1 1 9 29.0 C .52 .42 .68 .56 C 10.11 55.56 13-7 2 0 5 16.1 .0505 .0807 8.60 46.00	•	0		12,9		-,19	*.17	-,30	*,28					•
OPTION WT N P PB-ST PB-TT B-6T B-TT ST TT 0 0 17 54.851356444 .7.29 43.41 C 1 1 9 29.0 C .52 .42 .68 .56 C 10.11 55.56 13-7 2 0 5 16.1 .0505 .0807 8.60 46.00	TOTAL		31		•	,	•				•		Ù,	
0 0 17 54.851356444 .7.29 43.41 C 1 1 9 29.0 C .52 .42 .68 .56 C 10.11 55.56 13-7 2 0 5 16.1 .0505 .0807 8.60 46.00	ITEM NUMBER 10				;	COEFFI	CIENTS	OF CORRE	LATION		Me	ANS		
0 0 17 54.851356444 .7.29 43.41 C 1 1 9 29.0 C .52 .42 .68 .56 C 10.11 55.56 13-7 2 0 5 16.1 .0505 .0807 8.60 46.00	OPTION	WT	N	P		PBeST	PB-TT	B∞ST	8=17		ST	ŤŤ		
C 1 1 9 29.0 C .52 .42 .68 .56 C 10.11 55.56 13-7 2 0 5 16.1 .05 =.05 .08 =.07 8.60 46.00					1	•					I	11		
2 0 5 16,1 ,05 4,05 ,08 4,07 8,60 46,00														
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TEST NO 1 ACH	IEVEHENS	MONITOR	ing tu				SURTES	T 4	SUBTRA	CTION FA	CTS	
ITEM NUMBER 11				COEFF	CIENTS (OF CORRE	LATION		ME	ANS	•	
OPTION	нT	N	P	PB=\$T	P8-TT	B-ST	₽≖TT		ST	ָ דַּדָ	1	
5 C i	. 0	14 12 5	45.2 38.7 16.1	-,63 C .66 -,02	44 .53 11	.,79 .84 -,04	-,55 ,68 -,17	c	6.79 10.17 8.20	41.28 55.75 44.20		12 - 9
TOTAL		31		COEFF	ICIENTS (OF CORRE	LATION		ME	ANS	1 .	· pr
OPTION	NT 5	N -	P	PB=ST	PB#TT	B=ST,	8=11		ST	11		V
0 C 1 2 TOTAL	0 1 , 0	14 9 8 31	45.2 29.0 25.8	37 C .468 28	22 .34 09	.46 .89 39	28 .44 13	C	7,43 10.67 7,25	44,29 53,89 45,37	*	15'- 8

LERTAP 2,0					SUMM	ARY ITE	H S	TATIST	ICS					PAG
TEST NO 1 , ACH	IEVEMENT	MONITO	RING 7U						SUBTE	ST 5	- ADDITI	ON ALGORIT	'HM .	
- ITEM NUMBER 1					COEFF	ICIENTS	OF	CORRE	LATION		MŞ	ANS	ITEM DESCRIPT	IONS
NOITAC	WT	N ,	P		PB=ST	P8 - TT		B-ST	8-11		ST	17	•	
0	ů	0	٨	٠.	,			60						
C 1	1.	27	,0	۸	•00	-		.00	•00		.00	• 00	110	
5 1	, 0 [.]	4	87.1	Ç	• • 02	•		•.03	•.03	Ç	10,19	47,26	43	
TOTAL		31	12,9		*03	.02		.,03	.03		10,50	48.00	+ 25	
			4.5			-				1			لي 140 Santania	
7984 HILLIAMS						•		ι			٧ .	;	•	
ITEM NUMBER 2					COEFF	CIENTS	OF	CORRE	LATION		HE	ANS '		, z.,
OPTION	WT	. N	P		P8-5T	P8+TT		B=ST	8-11		ŠT	TT	±	
)	0	0	.0		•00	.00		.00	.00		.00	.00	111	
¢ 1	1	30	96.8	C	.24	•55		, 45	.43	c	10.47	47,87	17.	
à	0	1	3.2	•	24	••55		-,58	•,55	٠	3.00	35,00	+ &H	
TOTAL		31				- 1		,	-103		0,00	25104	-	
	·													
ITEM NUMBER 3					COEFFI	CIENTS	OF	CORRE	LATION	. *	ME	ANS		
OPTION	WT	, N	P		PB=ST	PB-TT		B-ST	BeTT		ST	· 11		
							:						52	
	0	1	3,2		14	01		-,34	01		6,00	47.00		
C 1	1	27	87.1	C	, 38	, 33		•58	,51	Ç.	11.04	48,93	+ 45	
5	0	3	9.7		-,34	•,37		•,59	-,64	•	4.33	33,33		
· TOTAL		31									1			
NOTE AND AND ADDRESS.				,		₹	•						ſ	
ITEM NUMBER 4	•	ميا			COEFFI	CIENTS	OF	CORRE	LATION		ME	ANS		
OPTION	74	N	P		P8-57	PB-TT		B#ST	BeTT		ST	. 11		•
0	e	0	•0		•00	٥00		.00	.00		.00	•00	614	
· C 1	1 .	29	93.5	C	,27	.17		,47	,29	C	10.62	47,90	001	
Ş	Ŏ	. 5	6,5	•	•,27	- 17		-,52	'35	•	4,50	39,50	+ 384	
TOTAL	•	31	.,.		- ,	• • •		-,02	-156		. 7000	49,50	de Carlo Million	
										•				•
ITEM NUMBER 4	,				COEFFI	CIENTS	of	CORRE	ATION	•	ME	ANS		•
OPTION	WT	N	p		P9=ST	PB-11	•	8-51	8+11		ST	TT	م مصرا	
		ā	_				,						132	
. 0	0	0	.0	_	.00	,00		.00	.00		.00	• 00	+ 551	
C 1	1	58	93,5	¢	.17	.06		,31	•11	¢	10.48	47.55	· , ລວ[
. 2	0	2	6,5		17	06		-,34	15		6.50	44.50	Phy / Committee (PM)	
TOTAL		31.										ů.	,	

TEST NO 1 ACH	IEVEMEN	T MONITOR	TING TU						SUBTES	T 5	ADDITI	ON ALGORIT	нм .
ITEM NUMBER 6					COEFFI	CIENTS	OF C	ORREL	ATION		ME	ANS	
OPTION	WT	N	P		PB•SŤ	PB-TT	8	- \$T	Ŋ-TT		ST	TT	
0	0	0	• 0		.00	.00		.00	.00		.00	.00	E00
C 1	1	30	96.8	Ċ	,14	.01		.27	.01	C	10,37	47,37	503
,	Ō	1	3.2	•	-,14	01		.34	01	•	6,00	47.00	+ 000
TOTAL	•	31	412		-11.	7171	Ī	10,	-141		*,00	.1144	1 273
	\								·				
ITEM NUMBER 7	,				COEFFI	CIENTS	OF C	ORREL	ATION		ME	ANS	
OPTION	WT	N	P.		PB-ST	PB-TT	В	-ST	B•TT		ST	TT	
													56
. 0	0	0	• 9		.00	.00		.00	,00		.00	.00	30
C 1	1	14	45.2	¢	.62	, 69		8۲.	.87	C	14.07	56,86	+ 6
5	0	17	54.8	•	62	69	•	.78	87	•	7.06	39,53	-
TOTAL	•	31			_						•		
					` '		ù					Į.	
ITEM NUMBER			,	•	COEFFI	CIENTS	OF C	ORREL	NCITA		ME	ANS	
OPTION	TH	N	P		PB=ST	PB+TT	8	-ST	B⇔TT		ST	TT	20
									_			4	29
0	0	5	6.5		17	10		,34	20		6.50	42.50	+ 8
C 1	1	17	54.8	Ç	•57	.64		.71	.81	C	13,12	54.65	' ()
5	0	12	38.7		-,49	-,61	•	,63	0,77		6.75	37,83	
TOTAL		31			,								•
ITEM NUMBER 9					COEFFI	CIENTS	OF C	ORREL	ATION		ME	;ans	1
					•								1
OPTION	WT	N	Ρ̈́		P8-ST	P8-TT	~ 8	I=\$T	B=TT		ŞT	11 6	. 6
	b									,		10 44	+ 85
. 0	0	; 5	6,5		••50	•,22		.39	-,43		6,00	37.00	1 80
Ç 1	1	15	48,4	C	,77	,72		.96	.91	Ç	14.67	56,67	
5	0	14	45.2		≠ •67	•,62	•	.84	-, 78		6.07	38,86	
TOTAL		31	·			•	•						
ITEM NUMBER In					COEFFI	CIENTS	OF C	ORREL	ATION		ME	;ans	•
			_										· 00
OPTION	WT	N	P		PB=5T	PBNTT	΄ Ε	-\$T	BoTT		\$1	TT	38 + 45
U	0	6	19,4		-,18	-,16		, 26 •	-,24		8,17	43,17	+ U5
_	ì	9	29.0	C	,84	.76		,11	1,01	C	17,56	62,22	1 70
153	Ò	16	51,6	•	-,62	⇒. 56		.77	-,71		6,88	40.56	
	•				, - =								

TEST	NO 1 ACH	IEVEMEN.	T MONITO	RING 7U						SUBTES	iT s	S ADDIT	ION ALGORI	THM		ŕ
ITEM	NUMBER 11					COEFF	CIENTS	OF	CORRE	LATION		M	ANS ,	:	•	
•	OPTION.	WT	N	P		P8-ST	P8+TT		B=ST	B⊷7Ţ		ST	TŢ			
	0	0	5	6,5		-,15	-,1}		-,29	= 155		7,00	42.00		,	•
•	C 1	1	11	35.5	C	.73	.71		,93	.92	¢	15,73	59,36		2	9
	5	0	18	58.1		-,63	-,64		-,80	~.8 0		7,22	40,61		7 2	\ \
•	TOTAL		31				,	t							+ 3	_
ITEM	NUMBER 12	,	·			COEFFI	ICIENTS	OF	CORRE	LATION		ME	ANS			
	NOITAO	WT	N	ρ		PB=ST	P8+TT		B ⇒ ST	B≖TT		· \$7 4	ΤŢ	•		•
	(1	0	2	0.7		. 10	• 4								n	Λ
	C 1	1	3 3	9,7 9,7	^	-,19	-,14		-,32	•,24		7,00	42.00		q	8
	2	Ô	25	80,6	V	,49 -,23	,52 •,28		.85 32	,89	C	18,67	67.00		+ 7	2
	TOTAL	•	31	-		. 4153	4120		1135	40		9,60	45,64		. ' -	_
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ITEM !	NUMBER 13					COEFFI	CIENTS	ÖF	CORRE	LATION		ME	ANS			
•	OPTION	. WT	N	P		PB=ST	PB-77		Ð≠ST	8-77		- ST	TT	,		
癞	0	0	4	12.9		,24	-, 25		-,38	40		6,75	39,25	1	16	7
der	C 1	1	71	35,5	C	.88			1,14	56,	Ĉ	16,91	59,36	•	4 11 2	<i>i</i>
	, 5	0	16	51.6	•		-,52		86	05	•	6,50	41,12		' <u>T</u> 4	<u>.0</u>
	TOTAL		31	ı	•	·	,,,	•	•		,	7,50	,4146			
,	•				,		•									•
ITEM A	NUMBER 14		-			COEFFI	CIENTS	OF	CORRE	LATION	•	ME	ANS	•		
-	OPTION	WT	N	· Р		P8-ST	PB=TT	1	B-ST	B+TT		ST	77		72	7
£	C o	0	4	12,9		-,24	• , 25		-,38 :	-,40		6,75	39,25	٠	+ 01	٠ <u>,</u>
•	C 1	Į	9	29.0	Ç	.84	.72		1,11	.95		17,56	61,33		<u> </u>	5
	5	0	18	58.1		-,61	-,49		-,77	62	•	7,33	42.17	•		
	TOTAL	,	31			,	\									
ITEM E	IUMBER 15							Ar	0000e	ATTAN			AME			
* (CI)						GUEFFI	CIENTS	۷ľ	CURUE	TITON		ME	AND		، ممال	^
	OPTION	, WT	N	` P		PB=ST	PB=TT		B≠ST	8-11		ST	TT		40	4
	0	0	6	19,4		-,27	-,22		-, 38	·.31		7,17	41,83		+ 38	3
	C 1	1	8	25,8	C	.79	,59			.60	C	17.75	59,87		***************************************	
	2	.0	17	54.8		-,48	-,35		-,61	4,44		7.76	43,41			
	TOTAL		31													

LERTAP 2.0 .				,	SUMM	ARY ITEM	STATIST	ICS					PAGE 34
TEST NO 1 ACH	IEVEMENT	MONITOR	RING 7U				•	SUBTE	5T ,6	ADDIT	ION ALBORITH	• M	
ITEM NUMBER 16					COEFF	ICIENTS	OF CORRE	LATION		М	EANS		
OPTION	WT	N '	Þ		PB=ST	PB-T7	B=ST	Bett		ST	11		
, 0	0	7	22,6		-,31	-,29	-,43	÷,41		7.00	40.57		•
Ç 1	i	9	29.0	C	.90		1,19	,93		18,11	61.00	155	•
2	0	15	48.4	٠,	-,56	-,39	-,70	-,49	٦	7.00	42,33		
TOTAL		31							J	• • •	,	+ 792	
ITEH NUMBER 17		•			COEFFI	CIENTS	OF CORRE	LATION		. н	EANS		
004104	u₹	, ,											,
OPTION	WT	N	P	i	PB#ST	PB=TT	B=ST	8+TT		ST	TŢ	1	•
0	0	8	25,8		•,35	-,31	-,48	41		6,88	40.87	171	ı
Ci	ĭ	10	32,3	¢	.92	,77	1.20	1.00	C	17,70	61.20	671	İ
5	0	13	41.9		 56	-,45	·.71	-, 57		6,54		. + 17/	J
TOTAL		31			, .					4		· T 1/2	
-										,		а ,	
ITEM NUMBER 18	:	: ,			COEFF	CIENTS	OF CORRE	LATION		M	EANS)	
OPTION	WT	N	p		PB=ST	PB-TT	B=ST	B-77		ST	IT	,	, ·
0	0	8	25,8		-, 35	-,31	-,48	∞,41	•	6,88	40.87	334	-
C 1	1.	10	32.3	Ç	.92		1,20	1,00	Ç	17.70	61.20	+ 484	7
2	0	13	41.9		56	-,45	71	-,57		6,54	40,69	, 707	
TOTAL	λ.	31										-	?
										٩			
ITEM NUMBER 19					COEFF	CIENTS	OF CORRE	LATION		- PM	ANS	I	**
OPTION	WT	N .	P		P8=57	PB-TT	8-57	B=TT		ទា	TT),,,,	. ` n
0	0	10	32,3		. 4,35	•,24	•,45	-,31		7,40	43.00	7.4 P	1
	1	8	25,8	C	.86	.63	1,16	.85	C	18,37	60.62	· + 470)
, 5 C 1	Ô	13	41.9		43	•,33	-,64	-,41		7,38	42,54	- j j	
TOTAL	•	31						•			·		1
•													
ITEM NUMBER 20					COEFF	CIENTS	OF CORRE	LATION		Н	EANS		
OPTION	NT :	N	P			PB+TT		8-11		31	ĨĨ	338	}
0	9	14	45,2		··· ••38	•,35	48	-,44		7,85	42,57	+ 595	}
1 0.1	1	6	19,4	C	.78	60	1,12	87	C	19,17	62,67	Applications	Mar. n.
151 01	0	6 11	19,4 35,5			-,13	₩,32	0.17		8,36	45,09		158
TOTAL		31		•						•		•	

TEST NO 1 ACHIEVEMENT HONITORING 7U

SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER: 21	·, •				COEFF	CIENTS	0.5	CORRE	LATION		ME	ANS	١	•
OPTION	ИT	N	p		P8-ST	P8=11		B=ST	Bett		5 T	TT -	•	•
0	0	18	58,1		-,08	 10		10	12		9,83	46.33		86十
Ci	1	1	3.2	C	,45	.52		1,10	1,28	C	24.00	83,00	ــــــــــــــــــــــــــــــــــــــ	100
5	0	12	38.7	-	08	09		=.10	- 15	•	9,67	45,92	T	658
TOTAL	, ,	31	•••		-,,,,	- 101			-114		7,01	73976	A (-
	,													
ITEM NUMBER 22					COEFF	CIENTS	0F	CORRE	LATION		ME	ANS		
·	_											ď		
OPTION	WT	, N	P		PB=ST	PB=TT		B-\$T	8-77		, ST	₹ T T	,	` ,
	0	21	67,7		,04	a ,04		.05	··· 05		10.38	47.00	*	59
C 1	1	1	3,2	Ç	, 45	,52		1,10	1,28	C	24.00	83.00		-
a	0	9	29,0		-,22	-,16		₩,29	- 51	•	8,53	44,22		49
TOTAL		31	_ ,		,			,	•••		-100	7746	+	
)		•								•			. 1	37
ITEM NUMBER 23					COEFFI	CIENTS	OF	CORRE	LATION		ME	ANS		
OPTICN	WT	N	P		P8=ST	PB+TT		B=ST	8+17		ST 、	TT	,	ر ۸ ا
0	0	24	77,4		01	02		01	-,03		10,21	47,21		21
C 1	ì	2	6,5	Ĉ		,51			.99	c		71.50		33
5	Ô	5	16.1	٠,	~.35	-,31		- 52	47	٠	5,80	36,40	,	_
TOTAL	. •	31	1041		× 6 23	-131		4126	141		3,00	- 20 4 NO	+	59
		31											•	<u> </u>
ITEM NUMBER 24					COEFFI	CIENTS	OF	CORRE	LATION		, ME	ANS		
OPTION	WT	, N	ρ		PB-ST	P8=TT		8-\$T	BeTT		ST	-11		86
						·								
0	0	24	T7 4		₩ 001	-,02		01	•.03		10.21	47.21		27
Cl	. 1	1	3,2	Ç	,45	,52		,1,10	1,28	C	24.00	83,00	+	۵٥
a	0	6	19,4		19	-,21	•	₩,28	-,30		8,00	42,00	1	98
TOTAL		31												·

TEST NO 1 ACH	EVEMENT	MONITOR	RING TU						SUBTES	7 6	SUBTRA	CTION ALGO	RITHM	
ITEM NUMBER 1					COEFFI	CIENTS	OF	CORREL	ATION.	•	WE	ANS	ITEM DESCRIPTIONS	
OPTION	ΝŢ	N	P		P8=\$T.	P8-T1		B-ST	8-TT		ST	444		
0	0	0	.0		,00	.00		.00	.00		.00	.00	07	i
C j	1	29		Ç .	.20	.13		, 35	,24	C	5,93	47,79	87	
2	Õ	5	6.5		20	13		-,39	• , 26	•	3,50	41.00	- 51	
TOTAL		31											Windsamore	
ITEM NUMBER 2					COEFFI	CIENTS	OF	CORREI	.ATION		WE	ANS		
OPTION	WT	, N	p	,	PB-ST	P8-TT		B-\$T	8-77		ST	. 11		
•	•							0.0	٨٨		0.4	۸۸	. 79	
0	0) 35	0,	_	.00	.00		.00 .49	,00 ,36	ē	.00 6,28	.00 48.92	H 0	•
5 C 1	1	25 `6	80.6 19.4	C	.35 35	.26 .26		- 50	•.37	٠	3,67	40,83	- 43	
, TOTAL	U	31	1764		4130	-160		-100	-101		•••		•	
ITEM NUMBER 3					COEFF1	CIENTS	OF.	CORRE	LAŢION		ME	ANS		
OPTION	WT	N	P		P8=ST	P8+TT		B=\$1	B*TT		ST	TT	00	
	۸	۸	,		0.0	44		.00	.00		.00	•00	98	
0 C 1	0 1	0 2 7	.0 87.1	Ċ	.0C	.00 .43		.50	.66	C	6,15	49.41	- 25	
5	0	4	12.9	•	-,33	-,43		* ,52	•,68	•	3,25	33,50	-	
TOTAL	•	31	••••			.,,,		•	·			•	·	,
ITEM NUMBER 4		•			COEFFI	CIENTS	OF	CORRE	LATION		ME	ANS	}	
OPTION	WY.	N	P		PB-ST	P8+11		B-ST	B+17		\$1	TT	مات ،	
ņ	0	5	6,5		-,25	-,16		~,48	-,34		3,00	39.00	915	
c i	ì	25	80.6	C	,35	.03		.49	,04	C	6,28	47,52	'-411	
2	Ö	4	12,9		• , 23	,10		-,37	.15		. 4,00	50.50	-	
TOTAL	-	31												
ITEM NUMBER 5					COEFFI	CIENTS	OF	CORRE	LATION		М	ANS		
OPTION	WT	N	P		P8=\$T	PB=TT		8-ST	B-TT		ST	TT	293	
		. 3	9.7		-,23	-,31		-,40	•,53		3,67	35,67	<u>~ Ιμη</u>	
0		. 3 23	74.2	Ç	• 33	.34		,44	(45	С	6,35	49.83	170	
0.1	1	23 5	16.1	٠	20	•.15		-,31	- 23	-	4,40	43.00		16.
L61 TOTAL	•	31			, ,	•••		-	- •					T ()
LOT 1414E		•									•			

					•		. •		• • •				•	.71
TEST NO 1 ACH	IEVEMEN'	T MONITO	RING 7U			. \$			SUBTES	ST 6	SUBTR	ACTION ALGOR	ITHM ,	
ITEM NUMBER 6					COEFF	ICIENTS	OF C	ORRE	LATION		М	ANS		
OPTION	74	N	P		P8 - \$T	PB-77	8	-ST	8+11		\$T	77		
. 0	0	3	9,7		-,31	•,27		,53	47		3,00	37.00	0.0	
. 01	1	25	80.6	Ċ	, 35	,30			.43	٨	· -	49,20	868	
ž	Ö	3	9.7	•	-,16	·,13		.27	•.23	v	4,33			
TOTAL	·	31	741		-710	-113	•	+ = 1	4,60		4493	42.33	- 443	
				,										
ITEM NUMBER 7					COEFFI	CIENTS	OF C	ORRE	LATION		ME	ANS		
OPTION	WT	N	P	•	P8-5T	PB≈Tï	В	-ST	8-11		, ST	TT		
. 0	٥.	3	9,7		.21	.31		, 36	.53		7,67	59.00	52	
C 1	1	Ş	6,5	Ĉ	.68	.37		.33	,72	ò	13,50	65.00	53 - 9	
2	Ō	26	83,9	•	62	-,49		92	7.73	U	4.96	44,65	- 9	
TOTAL		31	•••			7,47	•	, , .			4,70	74100	Mangagaligan	
ITEM NUMBER B					*****	,								
TICH HOUSEN D			•		COEFFI	CIENTS	OF C	OMKE	LATION		ME	ANS	•	
OPTION	WT ,	N	p			PB4TT	В	-\$7	5-17	٠,	ST	11) i	
0	0	1	3.2		.01	-,06		03	· » . 16		6,00	43.00	34	
: C 1	1	5	16,1	Ĉ	.68	.49			.74	Ċ	10,40	61.40	- / _^	
ż	0	25	80,6	•	•.64	-,43		91		٧	4,84	44,72	-	
TOTAL	·	31	00,00		****	-140	-	• * •	-101		7 1 0 1	74116		
ITEM NUMBER o						;								
TIEN HOUSER 4					COEFFI	CIENTS	ak C	DHKE	LATION		ME	ANS		
OPTION	WT	N	P		PB-ST	P8-97	В	-57	B⊷TT		ST ·	TT	67	
ŋ	0	1	3,2		.01	-,06		,03	-,16		6,00	43.00	Q	
c 1	1	5	16,1	C	,62	.61		94	,91	C	10.00	64.60		
ž	ō	25	80.6	•	-,59	- 54		84	· • 176	•	4,92	44.08		
, TOTAL		31			, -	•••	·		•••		,,,,,	1100		
ITEM NUMBER 15					COFFE	CIENTS	الد در	1026	LATION		ur	ANS		
						¥441114	#F V				me	,AIT U		
OPTION	WT	N	P		PB=ST	P8=T7	8-	•ST	∫ 8 - 17		ST -	11	70	
0	Q	0	.0		.00	.00		.00	.00		.00	.00	. 20	
C 1	1	1	3,2	C	,81	,52		99	1,28	C	19.00	83.00	· - 34	
2	0	30	96.8		w.81	• 52		57		-	5,33	46,17	-	
TOTAL		31				-	- •		- · ·		•			

TEST NO 1 ACHT	EVEMENT	MONITOR	ING TU	;				SUBTES'	f 6	SUBTRA	CTION ALGOR	ITHM .
ITEM NUMBER 11					COEFFI	CIENTS	OF CORREL	ATION		ME	ANS	
OPTION	μT	N	Р		PB-ST	PB=TT·	B⇒ST	8-11		\$ T	77	•
		_	, -		A 4	A 1.	-,13	08		5.00	45.50	· 53
n	9	5	6.5		07	04			¢	19,00	83.00	- 01
Ç 1	1	1	3,2	C	.81	,52	1,99	*.46	٧	5,36	46,21	- 34
5	. 0	28	90.3		-,43	-,28	-, 70	~140			01.01	ternin
TOTAL		31									**	
ITEM NUMBER 12		,			COEFFI	CIENTS	OF CORRE	ATION		MΕ	ANS	
QPTION	wT	N Ĭ	Р		PB=ST	PB•TT	B=ST	B=TY		ST	TT .	83
		بير بالمعن			11	19	+,17	20		5,00	43,60	0 ₩
· C	0.	5	16,1	_	#:11	•.13 E2	1.99	1,28	Ċ	19.00	83,00	- 41
C 1	1	1	3,2	Ü	,81	.52	3 7	=,16	•	5,40	46,68	
2	. 0	25	80,6		-,26	11	-,5	-110	`	0,70		
TOTAL		31										
**FU MUUDED 11					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
ITEM NUMBER 13					00			•				,
. OPTION	WT	N	P		P8-5T	PB-TT	B#ST	5 - 11		ST	TT	
	۸		10.4		-,13	-,11	-,18	·,16		5.00	44.50	864
0	0	6	19.4 6.5	C	,82	.54	1.59	1,05	C	15.00	73.00	
C 1	1	2		٠	n,34	. ,20	-,46	-,27		5,17	45,87	- 225
2	0	, 23	74.2		4634	. 4,50				•••	·	grant-maring
TOTAL .		31										
ITEM NUMBER 14					COEFF	CLENTS	OF CORRE	LATION		ME	EANS'	
OPTION	WT	N	Р		P8=\$T	P8=11	B≔ST	B-YT		ST	TT	
											44 55	774
0	0	6	19.4		16	04	52	 06		4,83	46.33	- 529
C 1	1	2	6,5	C	.82	,54	1.59	1.05	Ç	15.00	73,00	- 321
5	ō	23	74.2		32	-,27	.,43	= , 36,		5,22	45,39	
TOTAL		31							•	È.		
••••										ţ*		
ITEM NUMBER 15		•			COEFF	ICIENTS	OF CORRE	LATION	t	M£	ANS	• . /
OPTION	μT	N			PB=ST	P8-T1	8=ST	B=TT		ST	ΤŢ	952
		_	Af 4		13	_ 11		-,16		5,12	44.87	_ опэ
. 0	0	8	25,8		4,13		1,59	1,05	C	15.00	73.00	- 075
C 1	1.	5	6,5	Ç	,82		-,40	×,23	•	5,14	45,86	•
$\ddot{\xi}_{\text{LATOT}} = \ddot{\xi} \partial$	0	. 21	67.7		-,31	. = 17	#, TV			414	.0100	
UO TOTAL		31						/				

TEST NO 1 ACHIEVEMENT MONITORING	70
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SUBTEST 6 SUBTRACTION ALGORITHM

						•							
ITEM NUMBER 16		,		ç	COEFFI	CIENTS	OF CORRE	LATION	,	ME	ANS		
OPTION	NT	N	P		PB=ST	P8-TT	BeST	8=TT		· \$1	ΤŢ		
0	0	9	29,0		07	w.06	, 09	•,08		5,44	46,22		/ 1:1
C 1	i	1	3,2	C	81	.52	1,99	1.28	Ĉ	19,00	83,00		614
, ,	ò	21	67.7	•	24	-,14	-,31	-18	•	5,29	46,14		- 384
TOTAL	•	31	• ()		-144	- 4 4 1	-,-,-	.,,,,		-167			. <u>207</u>
•													
					į.								
ITEM NUMBER 17					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		1
OPTION	WT	N	ρ		P8+ST	PB+TT	8-\$1	B-TT		ST	TT	•	•
0	0	10	32,3		13	-,14	•,17	18	•	5.20	44.90		929
Ci	ì	0	,0	C	.00	.00	.00	,00	C	.00	.00	•	
ž	ō	21	67.7	•	.13	,14	,17	.18		6,05	48.52		- 536
TOTAL	-	$\vec{\mu}$			• • •	,	V - ·	,		.,,-			
_		1						$L^{c'}$					
esen munes		•			*****							,	
ITEM NUMBER 18					COEFFI	CIENTS	OF CORRE	LAIIUN		ME	ANS		
OPTION	WT	N	P		PB=ST	PB=TT	B=ST	8-11		ST	TT .		639
0	0	11	35,5		13	-,22	-,16	-,28		, 5,27	43,73		- 2112
, ¢ 1	ì	1	3.2	c	.81	,52	1.99	1,28	C	19.00	83,00		- 243
. 2	ņ	19	61,3	•	• . 1\T	.05	-,22	,03	•	5,37	47.58		**************************************
TOTAL	٠,	19 31	7.10			, , ,	.,,,,,	,,,		-,0,			
_													
ITEM NUMBER 19					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		
OPTION	WT	N	p		P8-ST	DQTY	8 - ST	B- T T		ST	TT		
0F 1,10N	, "'	14			, 10-31	70411	0-01			J1	' '		·
0	ð	13	41,9		18	-,15	-,22	-,19		5,15	45,15		, 047
C 1	1	0	.0	C	•00	.00	.00	.00	¢	.00	.00		- 628
Ş	Õ	18	58,1	-	.18	15	.22	.19		6,22	48.94		<u> </u>
TOTAL		31			•	• -	·						
		1				•							
ITEM NUMBER 20					COEFFI	CLENTS	OF CORRE	LATION		ME	ANS		
green monager as			•		90.01.1					•			•
OPTION	WT	N	P		P8+ST	P8-TT	Mary ST	8-17		ST	77.		942
		. =	- -			-	.].						
0	0	15	48,4	_	v a 14	-,14	- 18	- 18		5,33	45,53		- 575
C 1	1	1	3,2	C	.81	,52	ووبلاح	1,28		19,00	83.00	•	**************************************
2	0	15	48,4		14	-, 04	,18	-, 05	•	5,33	46,80		
TOTAL		31				J							

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TEST NO 1 ACHI	EVEHENT	MONITOR	ING 7U			•			SUBTES	T 6	SUBTRA	CTION ALGO	ннт
ITEM NUMBER 21					COEFFI	CIENTS	OF	CORREL	AT ION		ME	ANS	
OPTION	WT	N	P		P8-ST	PB-TT		B-ST	B-TT		SY	TŢ	
	0 .	15'	48,4		••14 •81	-,14 ,52		-,18 1,99	-,18 1,28	C	5,33 19,00	45,53 83,00	328
C 1 2 Total	0	1 15 31	3,2 48,4	V	-,14	-,04		-,18	·*•05	•	5,33	46,80	- 169
IOIAL	·	J.,				ě			ł			,	
ITEM NUMBER 22					COEFFI	CIENTS	OF.	CORRE	ATION		ME	ANS	•
OPTION	WT	N	P	٠,	PB-ST	PB=TT		B=ST	Bett		ST	11	
0	0	17	54,8	^	80.	 04		.11	-,05	c	6,00 .00	46,88 .00	710
C 1r	0	14	.0 45.2	U	00. 80	•00 •04		11	.05	•	5,50	47,93	- 469
TOTAL		31										•	
ITEM NUMBER 23					COEFF1	CIENTS	OF	CORRE	LATION		ME	ANS	
OPTION	WT	N	p		P8=ST	PB=TT		8 ÷ ST	B≠TT		ST	, 11	
. 0	0	17	54.8		.08	04		.11	·=,05	r	6,00	46.88	803
C 1 .2	1 0	0 14	0, 5,2	Ç	00 08	.00 .04		,00 -,11	,00 ,05	.	5,50	47,93	421
TOTAL		31											ia .
ITEM NUMBER 24	,		4		COEFF	ICIENTS,	OF	CORRE	LATION		. ме	ANS	
OPTION	WT (N	Р		P8=ST	P8-TT		B=ST	8-77		ST /	TT	600
	0-	20	64,5	-	.01	10		.02	=,13		5,80	46.40	600 - 212
C 1	1 0	0 11	,0 35,5	C,	.00 01	.00		.00 02	,00 . 13	C	.00 5.73	.00 49.09	-
TOTAL	•	31			,	V	•					;	•

LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 16

SUBTEST 1 TEST NO 1 ACHIEVEHENT MONITORING TV OBJECTIVES TEST ITEM NUMBER COEFFICIENTS OF CORRELATION MEANS ITEM DESCRIPTIONS OPTION 11 WT PO-ST PO-TT B-ST 8-11 ST 0 1 27 84.4 C ,56 ,83 .87 C 8.44 44.59 .38 -,64 ...26 5.00 3 3.1 -.11 -,26 36,00 Numerousness 2 6.3 ~.23 -,20 -,45 .39 5,50 34.00 Writes 0-99 2 -,30 6.3 ...42 >,83 +,59 4,50 29,50 TOTAL 32 COEFFICIENTS OF CORRELATION MEANS ITEM NUMBER 2 OPTION 8-ST B-TT NT PB-ST PB-TT ST TT .00 .00 ,00 1 .0 .00 .00 .00 Numerousness ,58 93,8 C ,43 . .76 0 9,03 43.97 0 2 30 .33 Represents 0-99 **,** 0 , 0 .00 0 .00. .00 .00 .00 **-,**54 5 6,3 m (184 8,50 24,00 .,33 -,43 TOTAL 32 COEFFICIENTS OF CORRELATION MEANS ITEM NUMBER 3 ST TT BaST. BaTT OPTION NT. PB-ST PB-TT .42 9,53 46,63 C 1 19 E1.4 C ,33 42 ,53 C Problem Solving (A) 8,50 37,50 12.5 0,07 m,28 w . 04 a, 17 Comparison 11-15 .10 .00 9,85 42.75 12.5 .06 .07 32.00 15,676 0,62 6,00 -.46 TOTAL COEFF' JENTS OF CORRELATION HEANS ITEM NUMBER : OPTION PB-F P8-TT B-ST BOTT 51 17 41. +,64 w.54 5.00 29,00 3,1 . ,26 .. 55 1 42,87 . 96 .01 9.00 Problem Solving (A) 8 25,0 .04 601 ,39 .26 9,62 45,62 50.0 C +31 ,32 Add-part part whole 9-99 C 3 16 e, 63 7,29 37,36 7 21.9 -,31 •,23 0,32

32

TOTAL

i i	. 5								1	•		,
	OPTION	HT	N	Р	P8=ST	PB-TT	8-ST	Batt		ST	TT	•
	1	0	3	9.4	-,34	11	-,60	18		6.00	39.00	, , , , , , , , , , , , , , , , , , ,
	C 3 ,	. 0	0 25	.0 76.1 (.00 .71	.00	,90. ,99	, 90 , 54	Ç	00,	,00	Problem Solving (B)
i .	4	Ö	4	12.5	• • 58	»,39	94	-,63	٧	9.80 4.75	45.04 31.00	Subt-part part whole-addend 11-15
	TOTAL		32			• • •	·	• -		.,,,	- 4,,,-	
ITEH NU	MBER 126				COEFF	ICIENTS	OF CORRE	LATION		ME	ANS ,	
	OPTION	ИŤ	ñ	P	PB=ST	PB+TT	B≖ST	B.=TT		ST	TT	
	C 1	1	21	65,6	,65	.39	,84	.46	C	10.05	45,62	
	. 2	0	1	3.1	-,33	15	*,81	3 8		4.00	33.00	Problem Solving (B) Subt-join-addend 0-99
	3	0	4 6	12.5	••37 ••33	-,16 -,23	-,59 -,48	•.25 •.33		6,25	38.00	Sast-Join-addend 0-99
	TOTAL	٧	32	7010	400	-103	a 040	-133	,	7.00	37.33	•
		L										
				. '		•						
	•										•	•
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	1 .						,			1		,
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LERTAP	2 .6				elium	OV TYPU	STATIST	201			1	PAGE 17
					Setting	IN LAIGH	,					
TEST NO	1 ACHIE	IVEHENT	MONITOR	RING 7V				SUBTES	7 1	OBJECT	IVES TEST	, 1
ITEM NU	MBER 87				COEFF	CIENTS	OF CORRE	LATION			ANS	
٠,	OPTION	WT	N	ρ	PB=ST	PB-TT	B=ST	B∍TŸ		ST	₽ TT	
ħ	1	0	6	18.8	~, 15	-,24	-,22	34	#	B.00	37.17	
1 1	C 5	1	24	75.0 0	, ,26	.26	.35	.35_	. کھ	9,21	44.42	Order, Place Value
	3	0	1	3,1	~. 26	09	•.64 • 14	- 22		5.00	37.00	Ordering 0-99
	TOTAL	V	1 32	3.1	* •06	-,03	 14	07		8.00	41.00	
	•				,							
ITEM NU	MBER. ℋŚ				COEFFI	CIENTS (OF CORRE	_ATION		HE.	ANS	

ITEM NUMBER XS OPTION PB-ST PD-TT B⊷\$T Bott ST TT 174 .58 -.08 -.30 .82 -.13 -.39 11.71 8,25 7,85 8,13 Ç 1 21.9 C 12.5 .69 C 53,29 ,49 - 52 - 52 .03 43.25 39.23 38,87 Order, Place Value 13 40.6 Place Value 0-99 \ 25.0 -- . 27 TOTAL 32

ERIC

¥ 16.0 W	01.11.11				GOETT.				.,,	C MILL	1	
	OPTION	WT	N		PB+ST	PB-TT	8+57	B-TT	ST	TT		
					.,							
	1	- 0	0	٠,	•00	•00	.00	.00	.00	.00		
	. cs	1	31	96.9	. 26	.09	.51 ≃ 64	••55 ••55	6,94 5,00	42,90	Sentence Writing (A	:)
	3	0	1	3,1	26 .00	 09	6 4	•00	•00	37.00 .00	Subt-simple separat	.ing 11+15
	TOTAL	U	35	• •0,	• • •	•00	,00	• • •	• • • •	100		
		٠									1	
ITEM N	UMBER A10	.'			COEFF	ICIENTS (OF CORRE	LATION	н	EANS	·	
	OPTION	WT	N	P	PB=ST	PB-TT	8-57	8-77	\$T	**		
	1	0	14	43,8	-,58	-,53	74	-,67	7.07	35,86	Camboura Nudadaa //	. \
	5	0	1	3.1	-,26		-,64	+155	5,00	37.00	Sentence Writing (A Subt-comparison 0-9	
•	СЗ	1	15	46.9			.92	,86 C		51,00	ounc-comparison v-;	
	4	ð	5	6.3	-,13	-,26	∞,25	 50	7.50	31,50		
	TOTAL		32			•	•					•
				7		. •						
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									•			, ,
							;	A.			# 4 A P	
LERTAR	2.0				Summ	ARY ITEM	STATIST	105			PAGE	18
TEST N	IO 1 ACHI	EVEMEN'	T MONITO	RING TV	i			SUBTEST	1 OBJEC	TIVES TEST		
100,						1	•			•	•	
ITFM A	NUMBER A				COEFF	ICIENTS	OF CORRE	LATION	м	EANS		
	OPTION	¥Τ	ţ, N	P	P8 - ST	PB-TI	B-ST	B+TT	ST	TT		į
		•					, F			35 (A		
	٠ 1	b	5	15.6	o ₁ 43		o,65	=,4]	6,20 8,50	35.60 45.00	Sentence Writing (B	.)
•	2	0	2 24	6.3	c ,48		-,06 ,65	.10 .39 C		44,58	Subt-part part whole	
	C 3 .	1	۶ ۴ 1	75.0 3.1	26		-,64	54	5,00	29,00	11-15	
	LATOT	•	32		•	•==						
	-		`									
iten i	NUMBER VIL				· coeff	ICIENTS	or corre	LATION	· 1	IEANS	7	H
	OPTION	WT	N	P	PB=ST	PB=TT	B=ST	B-TT	ST	TT	Z.	129
، معیدت فد			•		Ĭ.			_ 60	7	32 00		•
175) 1	0	1	3.1	-,12		-,31 ,63	38 45 C	7.00 9.14	33.00 43.72		
	C 5	1	29 1	90.6 3.1	G .39		-,64	-155	5,00	37.00	Sentence Writing (
Provided by ERIC	3 4	0	1	3.1	-,26		-,64	- 54	5,00	29.00	Add-simple joining	; 0-99
	TOTAL	-	35	,	•							

TOTAL

35

CORFFICIENTS OF CORNELATION MEANS

ITEM NUMBER 79

c.

TEST NO 1 ACHIE	VEMENT	MONITOR	ING 7V				SUBTES	T 1	08JECT	IVES TEST	4
							,		n		
ITEM NUMBER 13				COEFFI	CIENTS O	F CORREL	_ATION		HE	ANS	
NOITAO	'nΪ	N	P	PB#ST	PB-TT	B=ST	8-17		57	77	,
r C 1	1	10	31.2	.43	,61	.57	,79	Ç	10,50	52,90	
5	0	12	37,5	.03	05	.04	07		8,92	41.92	Algorithms
3	0	5	15,6	-,20	-,48	3 9	•,72		7,50	30.20	Addition Algorithm
, 4	0	5	15.6	40	.,22	60	34		6.40	36,80	Honicity Millorian
TOTAL		32	•		•						
ITEM NUMBER 14				COEFF	ICIENTS O	F CORRE	LATION		ME	ANS	,
OPTION .	WT	N	P	PB-ST	P8-TT	8-ST	BeTT		ST	11	
1	0	55	68,8	 13	•05	-,16	.02		8,59	42,86	· •
5	0	5	- 6,3	 08	. 08	-,16	*.17		8,00	39,00	Algorithms
C 3	1	4	12,5	C .42	.29	.68	,47	C	11.75	51.50	Subtraction Algorithm
4	0	4	12,5	-,19	و. 59	-,30	4]		7,50	35,00	
TOTAL		32	•			•					

LERTAP-2.0

SUMMARY ITEM STATISTICS

TEST NO) 1 ACH	IEVEMEN	TINOM T	ORING TV				SUBTES	ST 2	SENTER	ICE, WRITING	FREE RESPONSE
ITEM NU	JMBER 1				COEFF	ICIENTS :	OF CORRE	LATION		ME	: [ANS	
•	OPTION	,WT	N	P	P8+ST	P8=TT	B=ST	8-77	•	S 7	۲T	ITEM DESCRIPTIONS
	C 1 C 1 TOTAL	0	0 31 1 32	96,9 3,1	,00 ,33 -,33	• 00 • 44	.00 .65 -,83	.00 .85	Ç	.00 3,42 2.00	.00 43.61 15.00	Sentence Writing Add-part part whole 11-17
ITEH NU	MBER 2				COEFF	ICIENTS (F CORRE	LATION		ME	ANS	•
•	OPTION	, WT	, N	P	PB#S1	£ :,	9-\$7	B⊨TT		\$T	ΤŤ	
	C 1 2 TOTAL	0 1 0	0 32 0 32	100.0	.00 .00	,63 ,63	,00 ,00 ,00	•00 •00	c ,	,00 3,37 ,00	•00 42•72 •00	Sentence Writing Subt-simple separating 0-99
ITEM NU	MBER 3	•			COEFF.	ICIENTS (OF CORRE	LATION		ME	ANS	
_	OPTION	WT	N	p	P8-ST	PB=TT	8-51	B=TT		ST	TT	t
*. *	C 1 2 2 1	0 1 0	1 25 6 32	3,1 78,1 18,8	-,33 ,68 -,57	.15 .41 .36	+,83 ,94, +,82	*.38 ,57 *.53	C	2,00 3,64 2,50	33.00 45.16 34,17	Sentence Writing Subt-part part whole-addend 0-99
ITEM NU	MBER 4		مرکزیدا		COEFF	ICIENTS O	F CORRE	LATION		ME	ANS	
	OPTION	WT	N	p	P8-ST	P8•TT .	B=ST	8-11		ST	TT	
	0 C 1 S LATOT	0 1 0	1 20 11 32	3.1 62.5 34,4	•.33 .83 •.72	*.22 . .33 *.26	-,83 1,06 -,93	•.54 .43 •.34	C .	2,00 3,85 2,64	29,00 45,65 38,64	Sentence Writing Subt-join-addend 11-15
	•			· 1427	•	1					u.	

ITEM NUMBER 1					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	ITEM DESCRIPTIONS	
OPTION	wТ	N	p			P8+TT	B=ST			ST	ŤΤ	Ilta bescutt tous	
	٥	٨					0.Δ	۸۸	•	۸۸	۸۸		
0	0	0	0.	^	.00	.00 15	00. 21	.00 27	٨	.00 9.37	.00 42,27	3+1	
¢ 1	1	30 2	93,8 6,3	U	07	.15	,13	,30	٧	10.00	49.50	3 7 1	
TOTAL	٧	32	0,0		•••	6 7 2	1	100		10100	7,100		
				,							ı		
ITEM NUMBER 2					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		
AD7 + 3 \	11.7	4.			00.07	00 -	p. c7	8-77		α ST	17		
OPTION	WT	N	þ		PB=51	PB=TT	D+31	ប⇔[]		31	1 (
0	0	1	3.1		 56		-1.40	-1.09		2,00	15.00		c
C 1	1	31	96,9	C	•56	44	1,10	.85	C	9,65	43.61	2 + 5	
5	0	0	• 0		.00	.00	.00	,00		.00	.00		
TOTAL		35					k.			•			
											•_	1	
ITEM NUMBER 3					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		
OPTION	WT	N	P		PB-ST	PB-TT	B-ST	BHTT		ST	TT	,	
0	0	1	3.1		-,56	-,44	-1.40	-1,09		2.00	15.00		
Ci	i	31	96,9	C	56	.44	1,10	85	C	9,65	43,61	1 + 6	
5	0	ū	. 0		.00		.00	.00		.00	.00	• •	
TOTAL		32					ı			•	•		
						,		_		•	•		
ITEM NUMBER 4					COEFFI	CIENTS	OF CORRE	LATION		i ME	ANS	•	
OPTION	ΗT	N	P		PB=ST.	P8=TT	8-57	8-11		S٣	77		
, 0	0	1	3,1		56	.,44	-1.40	-1.09		2,00	15.00		
c i	1	31	96,9	С	.56	,44	1.10	.85	Ç	9,65	43,61	` , 7 + 2	
2	0	0	• 0	•	.00	.00	.00	.00		.00	.00		
TOTAL	-	35								2			
												1	
ITEM NUMBER 5					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	•	
GPTION	WT	N	P		PB=ST	PB-TT	B=ST	B=TT		ST	77		
•	0	C	0		,00	.00	.00	.00		00	.00	·	_
0 C 1	1	31	96,9	C	,18	.09	.36	,18	Ç	9,48	42,90	2 + 6	182
¥ 1				•				,,,,	-			<i>ሬ</i> ፕ ሀ	O 1
5	0	1	3,1		-,18	09	-,45	-, 22		7.00	37,00	•	



PRINCE P					-South	SKT IICH	1 PINITO	100				
TEST NO 1 ACH	IEVEMENT	MONITOR	ING 74					SUBTE	ST 3	ADDIT	ION FACTS	
ITEH NUMBER 6	,				COEFF	ICIENTS	OF CORRE	LATION		M	EANS	
0PT[08	WT	N	þ	ı	FB=ST	PBeTT	B=ST	B≈TT		ST	TT	
	o	5	6.3		43	-		•,50		5,50	31.50	
C 1	1	29	90,6	¢	•69		1.14	.78	C	9,93	44.45	3 + 5
	.0	' • 1	3.1		- ∗56	44	-1,40	-1,09		2,00	15,00	ر اور
TOTAL		3 5			, ,			,				1
	*					٧,		,				
ITEM NUMBER 7	* •				COEFFI	CIENTS	OF CORRE	LATION		M	ANS	
OPTION	WT	. N	р	**,	PB=ST	PB+TT	8+87	B≈TT	,		TT	
c	, , 0	5	15,6		w,73	-,40	-1,11	61		5.40	32,20_	
C a	i	26	81,3		.73	•				10,23		4 + B
5 .	0	1	3.1		-,11		27	•.03		8.00	42.00	4 T O
TOTAL	,	32		•	,,,,	•••	1	,,,		-,00	- 100	
	•						e					
ITEM NUMBER &		•			COEFFI		OF CORRE	LATION		ME	ANS	
OPTION	WĬ	N.	ρ		PREST	PB=TT	A_SŤ	B≠TT		ST	ŢŢ	,
		٠٠,	•		1 g-41	1.0-11	UPO 1	DV		31	+1	
<i>7.</i> 0	0	g:	28,1		64	-,50	85	-,67		7.00	33,67	
• / C	1	19	59,4		.71	•	,90				47,21	3 + 7
5	0	4	12,5		19	•	-,30	m. 05		8,25	41,75	
TOTAL		35			2	•••	•	•	í	•••	•••	
								F"				
ITEM NUMBER 9	ţ				COEFFI	CIENTS	OF CORRE	LATION	1	ME	AN5	
OPTION	WT	N * .	, P		PB=ST	P8-77	8-51	B-TT		ST .	TT	
0	. 0	11	34.4		•e71	-,55	-,92	· - .70		7,09	34,18	
C 1	1	20	62,5	C	.71	. 55	90	.70	C	10,70	47,50	5 + 9
2	0	1	3.1		03	03	-, 08	•.07		9,00	41.00	7 7 7
TOTAL		32										•
						,						
TEM NUMBER 10					COEFFI	CIENTS	of Corre	LATION		/ ME	ANS.	
OPTION	WT	N	P		PB=ST	PB-TT	8=ST	Bett		ST	TT	•
0	Q	17	53,1	•	4,7 4	·=.70	-,93	· • , 88		7.76	35,24	. 5
` 0.1	i	15	46,9	C	.74	,70	,93	.88	C	11.27	51,20	6 + 8
ż	Ö	0	,0		.00	.00	.00	.00	-	.00	.00	
TOTAL		32	•			•••	*	•••		• • •		€)

183

C 1 2

TEST 'NO 1 ACHI	EVEMENT	MONITOR	ING TV					SURTES'	1 3	ADDITI	ON FACTS	
ITEM NUMBER 11	,				COEFFI	CIENTS O	r corpel	"MOITAL		34	ans	
OPTION	wĭ	N	P		PBuST	P8+11	B≠ST	0-17		ST	11	τ
0 C 1 2 TO'AL	0 1 0	13 16 -3 32	40.6 50.0 9.4	C	87 .52 .08	56 .50 .07	73 ,65 ,14	.63 .13	¢ ,	7,79 10,62 10,00	35,08 48,44 45,33	8 + 7
TTEM NUMBER (12		ę	·		COEFFI	CIENTS C	F CORRE	LATION	.*	38	:ANS	
OPTION	. WT	N	P		PB≖ST	PR-TT	8-57	5-17		\$7	TT .	
0 C 1 2 TOTAL	Q 1 0	5 22 5 32	15.6 60.8 15.6	С	-:39 -:3 -:47		#,89 ,68 #,11	-,74 ,54 -,68	C	3,20 10,23 9,00	29,80 45,86 41,80	4 + 9

LERTAP 2.0					SUMMA	RY ITEM	STATIST	ICS				P
TEST NO . 1	IEVEMENT	MONITO	RING TV					SUBTES	T 4	SUBTRA	CTION FACT	rs
ITEM NUMBER 1					OCEFFI	CIENTS	OF CORRE	LATION		ME	ANS	ITEM DESCRIPTIONS
OPTION	₩Ţ	N	P		P8=ST	P8•TT	8# \$ T	8-11		ST	77	•
C 1 2 TOTAL	0	32 2 32	3.1 90.6 6.3	¢			,46		¢	9.00 8.03 3.50		7-1,
ITEM NUMBER 2	,				COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
OPTION	WT	N	p		P8=ST	PB-77	B=ST	8-11		ST	TT	
O C 1 2 · Total	0	1 30 1 32	3.1 93.8 3.1	C	.49				C	8,13	43,83	8 - 4
ITEM NUMBER 3					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
OPTION	WŢ	N	p		PB=ST	PB«TT	B=ST	B≈TT	•	ST	ΤŢ	
C 1 2 Total	0 1 0	2 28 2 32	6,3 87,5 6,3			.40 .31 =.02	.90	80 .48 03	C	4.00 8.39 3.00	44.04	9 ~ 5
ITEM NUMBER 4		•			COEFFI	CIENTS	OF CORRE	LATION	ı	ME	ANS	
OPTION	` \#T	N	P		PB=ST	P8-TT	B~ST	8-77		ST	TT	•
C 1 2 TOTAL	0 1 0	5 25 2 32	15.6 78.1 6.3		**55 *66 **30	=,35 ,53 ,38	•	63 .73 75		4.20 8.76 4.50	33,60 45.88 26.00	7 - 4
ITEM NUMBER =					COEFFI	CIENTS	UF CORRE	LATION		ME	ANS	·
OPTION	ΤW	, N	P		P8=ST	PB+17	B-ST	8-11		ST	11	

23 ; 32

C 1 2 TOTAL

21.9 71.9 C 6,3

.0.66 .72 -.21

-.35 .48 -,29

96 41

188

35.29 46.09 30.00

4,29 9,04 5,50

-,49 ,63 C

	714) Alilia	THI TIE	3.81.01	100					FAUL	•
TEST NO	O 1 ACHI	EVEHENT	MONITO	RING 7V					SUBTES	;T 4	SUBTRA	CTION FACTS			
ITEM NU	JMRER 6 '					CVEZE!	CIENTS O	ור רחממב	I ATTON		v.c	ANS			
# 1 m 1 m		_									πŁ	HNO			
	OPTION	ΉĬ	N	Р		PB=ST	PB-TT	8=57	B=TT		ST	TT			
	Ö,	0	5	15,6		0,61	•,32	- ,93	-,49		3,80	34,20			
	C 1	1	27	84.4	C	.61	.32	,91			8,52	44,30	4 - 3		
	2	0	0	.0		.00	.00	.00	.00		,00	•00			
	TOTAL		32								,				
ITEM NU	JMBER 7					COEFFI	CIENTS C)F CORRE	LATION		ME	ANS			
	OPTION	WT	N	р			PB-TT	B-\$7				ŢŢ			
			.,	,		اپ و .	+ W = 1 1	<i>-</i> ₩ 1	(JI	(1			
	0	0	4	12.5		-,44	, =. 09	-,71	15		4,50	40.00			
	0.1	1	26	81.3	C	•53	.19	, 76			8,50		11 - 2		
	5	0	2	6.3		-,26	-,18	= ,5 0	•,35		5,00	35.00	-		
	TOTAL		32												
ITEM NU	MBER A					coEFFI	CIENTS 0	F CORRE	LATION		ME	ANS	•		
	OPTION	ыŤ	N	Р		PB=ST	PB=T7	B=ST	B=TT		ST	TT		,	
				•							٠,				
	0	0	21	65.6		67	51	., 96	-,66		6,43	38,52			
	C]	, 1	3	25.0	¢	. •59	.41	80	•56		10.62	50.75	13 - 8		
	5	0	3	9.4		•55	.23	,38	, 39		9,67	50,67			
	TOTAL		38					•							
ITEH NU						COEFFI	CIENTS 0	F CORRE	LATION		ME	ANS	•		
	OPTION	W۲	N	р		P8=ST	PB-TT	B ÷S T	8-11		S٦	TT			
•	0	0	13	59.4	•	≈.70	~, 58	89	≠. 73	A	6,16	37,32			
	S 1	7	11	34.4	Ų	•67	.66	,86	.86	Ü	10,36	53.09	12 - 7		
	S JATOT	V	35 5	6,3		•11	-,13	.55	26		9,00	37.00	•		
	INTAL		JC				·								
ITEM NU	MAER 15				•	COEFFI	CIENTS 0	F CORRE	LATION		ME	ANS	٠,		
	OPTION	WT	N ·	, Р		P8-ST	PB=TT	8 - \$T	8-17		ST	TT			
	0	0	16	50.0		- ₀75	59	-,94	•.74		5,69	36,00	•		
Ĵ	Cl	1,	ß	25.0	C	, 64	.66		90	C	10,87	55,62	15 - 9]
J	2	0	32 3	\$5.0		,23	.03	, 31	.04		8,87	43,25	,		
	TOTAL														



ACH]	EVEHENT	MONITOR	RING TV					SUBTES	T 4	SUBTRA	CTION FACT	S
11					COEFFI	CIENTS (OF CORRE	LATION		ME	ANS	
10N	w¶	N	p		PB≖ST	P8-TT	5 - \$T	B≂TT		ST	**	
0	0	5	15.6		∞, 58	-, 49	•,88	-,74		4.00	29,80	
1	1	23	71.9	Ç	.60	.46	,79	.61	C	8,83	45.96	- 10 - 2
?	٥	4	12.5		17	80. •	-,28	13		6,50	40,25	- 10 - 2
AL		32					ţ.					
12					COEFFI	CIENTS	OF CORRE	LATION		Me	ANS	
(0N	WT.	- N	p		P8#\$T	PB-TT	8-\$7	B≖TT		ST	ĬĬ	
0	, 0	21	65.6		* •57	-,42	-,74	•,54		6,62	39,29	
	1	11		C		,42	.74	.54	C	10.00	49.27	16 - 7
2	Q	0	. 0		.00	.00	.00	.00		.00	.00	
AL		32										
	000 0 1 2 000 0 1 2 000 0 1 2 0 0 0 1 2 0 0 0 0	11 ON WT 0 O O O O O O O O O O O O O O O O O O	ON WT N 0 0 5 1 1 23 2 0 4 AL 32 12 ON WT N 0 0 21 1 1 11 2 0 0	ON WT N P 0 0 5 15.6 1 1 23 71.9 2 0 4 12.5 AL 32 12 ON WT N P 0 0 0 21 65.6 1 1 11 34.4 2 0 0 0	11 ON WT N P 0 0 5 15.6 1 1 23 71.9 C 2 0 4 12.5 AL 32 12 ON WT N P 0 , 0 21 65.6 1 1 11 34.4 C 2 0 0 .0	COEFFE CON WT N P PB=ST COEFFE COEFFE COEFFE COEFFE CON WT N P PB=ST COEFFE CON WT N P PB=ST COEFFE CON WT N P PB=ST COEFFE CON WT N P C .60 COEFFE CON WT N P C .67 ON WT N P PB=ST PB=TT 0 0 5 15.65849 1 1 23 71.9 C .60 .46 2 0 4 12.51708 AL 32 COEFFICIENTS C COEFFICIENTS C COEFFICIENTS C 12 COEFFICIENTS C 12 COEFFICIENTS C 12 COEFFICIENTS C 13 1 11 34.4 C .57 .42 2 0 0 .0 .00 .00	COEFFICIENTS OF CORRESON WT N P PB=ST PB=TT S=ST 0 0 5 15.6584988 1 1 23 71.9 C .60 .46 .79 P 0 4 12.5170828 AL 32 COEFFICIENTS OF CORRESON WT N P PB=ST PB=TT B=ST 0 , 0 21 65.6574274 2 0 0 .0 .00 .00 .00	COEFFICIENTS OF CORRELATION ON WT N P PB=ST PB=TT S=ST B=TT 0 0 5 15.658498874 1 1 23 71.9 C .60 .46 .79 .61 P 0 4 12.517082813 AL 32 COEFFICIENTS OF CORRELATION ON WT N P PB=ST PB=TT B=ST B=TT 0 0 0 21 65.657427454 2 0 0 .0 .00 .00 .00 .00	COEFFICIENTS OF CORRELATION ON WT N P PB=ST PB=TT S=ST B=TT 0 0 5 15.6	COEFFICIENTS OF CORRELATION ME CON WI N P PB=ST PB=TT S=ST B=TT ST 0 0 5 15.656498874 4.00 1 1 23 71.9 C .60 .46 .79 .61 C 8.83 P 0 4 12.517082813 6.50 AL 32 COEFFICIENTS OF CORRELATION ME CON WI N P PB=ST PB=TT B=ST B=TT ST 0 0 21 65.657427454 6.62 1 1 11 34.4 C .57 .42 .74 .54 C 10.00 2 0 0 .0 .00 .00 .00 .00	COEFFICIENTS OF CORRELATION HEANS CON WI N P PB=ST PB=TT S=ST B=TT ST YT CON WI N P PB=ST PB=TT S=ST B=TT ST YT CON WI N P PB=ST PB=TT S=ST B=TT ST S	

TEST NO 1 ACHIEVEMENT MONITORING TV

SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 1				COEFFIC	IENTS 0	F CORRE	LATION		ME	INS	ITEM DESCRIPTIONS	O
OPTION	WT	N	P	PB=ST	PBHTT	8=51	R-11		51	TT		
C 1 2 TOTAL	0 1 a 0	1 28 3 32	3.1 87.5 C 9.4	-,23 .31 -,22	-,44 ,32 11	-,57 ,48 -,38	-1 + 09 0 7 + 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	С	2,00 8,11 4,67	15.00 44.11 39.00	53. + <u>34</u>	
ITEM NUMBER 2		•		COEFFI	CIENTS (F CORRE	LATION		• · · · · · · · · · · · · · · · · · · ·	ANS		.•
OPTION	HT	N	Р	PB≠ST	PB-T1	8=ST	8-11		ST	TT		
C 1 Z TOTAL	0 1 0	30 2 0	.0 93.8 C 6.3	.00 .32	.26 .00	.00 57 .63	.00 *.46 .51	c	,00 7,23 13,00	,00 41,747 54, 1	30 + <u>21</u>	•
ITEM NUMBER 3			•	COEFFI	CIENTS (OF CORRE	LATION	,	ME	ANS	st	
OPTION	, WT	N	Р	PB+ST	P8-11	B=ST	8-11		, ST	TT	. 27.	,
total 6 7 0	0 1 0	0 30 2 32	93.8 C 6.3	.00 1.24 -,24	.55 .55 .00	.00 .43 -,48	.00 .39 44	С	,00 7,87 3,50	.00 43.37 33.00	+ 62	ı
. ITEH NUMBER 4	•	•	•	COEFFI	CIENTS (OF CORR	LATION		, \ ME	ANS		
ORTION	WT	N	P	PB+ST	P8 - TT	8-51	Batt		ST	TT		
0 C 1 2 TOTAL	0 1 0	5 27 0 32	15.6 84.4 C	+.41 .41 .00	•.53 .53 .00	61 61			3,40 8,37 ,00	28.80 45.30 .00	503 + <u>293</u>	•
		i	,		් CIENTS	Of CORRI	ELAȚION		ME	ANS	. •	1
ITEM NUMBER 5) WT	N	· P	1	P8+T1	B+ST	B-TT		ST	TT	2/5	7
0 c 1	0,1	7 25 0	21,9 78.1 C	49 .49	•.57 .57	68 .68		C	3,57 8,72	30.57 46.12	265 + <u>314</u>	194
TATO TOTAL		. 35			ı			-				

TEST	NO	1	ACHIEVEMENT	HONITORING	77
			•		

SUBTEST 5 ADDITION ALGORITHM

		•			•	٠,					THE PROPERTY	
ITEM NUMBER 6			•	•	COEFF	ICIENTS	OF COF	RELATION		, , H(EANS	· · ·
OPTION	WŢ	N	, . P	•	P8-ST	P8=TT	B-5	ST B=TY		ST	ŦŦ	
. 0	0	6 -	18,8		≈ 145	≈ ,53	* (3,50	30.17	
, c i	1	51	65,6	Ç	,37	7	°, (6,76	44,95	332
2	0	5	15,6	,	, ,00	. 55		00 433		7,60	48,40	+ 2017
TOTAL	٠.	32								٠ ئ		1240
								,		à		· Management
ITEM NUMBER 7					COEFFI	CIENTS	OF COF	RELATION		H	EANS	•
· OPTION	HT	, N	, ρ		P8-ST	P8=TT	8=5	ST B+TT		ST	TT.	
0	Q	· 4	12.5		-,29	-,33	-,4	7,53	1	4,25	32,75	7
Ci	ì	12	37.5	Ċ		,65		14 .83		11.75	52,25	/ -
à	ō	16	50.0	•	v = 52	-,41	* , (•	5,31	38,06	+ 56
TOTAL		35	****		-,00	- 1 - 1				7131	00,00	Constitution (Constitution)
• •	Į.					,			· •	,		
ITEM NUMBER A			•		COEFFI	CLENTS	OF COR	RELATION		· Mį	EANS	
OPTION	WT	N	P		PB-ST	PB=T7'	D=8	T BeTT		ST	ָ זָד	68
0	0	7	21.9		37	-,38	m ¹⁰ €	153		4,57	34.57	
· ci		-	40.6	C	.76	.63	. 6			11.31	51.38	. + 8'
a	.0	13 12	37.5		40	-,32	•,5		٠	5,33	38,08	
TOTAL	• •	32	, 0, ,0			-106	-1.		1	, 0455	40100.	
•		•				,	•			•	. •	
a f .		•						9	·			,
ITEM NUMBER 9					COEFFI	CIENTS	OF COR	RELATION		Mg ·	ANS	
OPTION	WT	N	P	•	PB=SY	P8=TT		T B-TT		st'	TT,	o. 79 (
0,	0	10	31.3		-,35	51	- 4	666		5,30	4 34,20	+ 7
C 1	Ţ	9	28,1	C	.60	48	. , 6	* .	C	11,78	51.44	
	0	13	40,6		1 -,21	.04	a , 2			6,45	43,23	•
TOTAL		38				*						• .
					. *	•	•					,
ITEH NUMBER 10	•			,	COEFFI	CIENTS	OF COR	RELATION		(M0	ANS	
OPTION	WT,	N	P		PB-ST	P8-TT	8-5	7 B-TT	u	ST	· 11 ·	20
	C	۵	3D 1		_ 9/-	60	1	2 _ 4=		% .ee	77 44	6-1
·	1	· 6	28, <u>1</u> 18,8	e.	+,24 -,65	•.32 •.40	*,3		· n	2,69	37.00	+ 64
, 5	ů	17	53.1	٧.	29	-,03	- 3		v	13,50 6,41	52,17 42,41	Management of the last of the
TOTAL	٧	32	2011		-187	-649	704	104			78044	
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		~-										

SUBTEST 5 ADDITION ALGORITHM TEST NO . ACHREVEHENT MONITORING TW. COEFFICIENTS OF CORRELATION MEANS, TTER NUMM. 11 ST TT 8=ST 8=TT PB-ST PB-TT N.P OPTION HT 6,00 35,78 -,30 -,51 -,23 -,38 28,1 55,00 12,75 .93 , 85 C .63 .68 25.0 C. 40,33 **...**48 5.80 -,39 -,20 46.9 15 32 TOTAL COEFFICIENTS OF CORRELATION ITEM NUMBER 12 B-ST / B-TT P PB-ST PR-TT CATION N ₩Ţ -.22 -.44 37.10 6,50 e.17 -,33 10 31.3 54.00 ' ,96 .65 C 14,00 .43 15.6 C .63 5 42.71 5,35 -,38 -,00 -,30 -,00 53.1 17 .32 TOTAL COEFFICIENTS OF CORRELATION MEANS ITEM NUMBER 13 P PB-ST PB-TT B-ST B-TT ST TT OPTICH 5,71 35,86 -.32 -.45 •,23 •,32 21.9 .66 .43 1.07 .69 C 15,25 / 55,50 12.5 C 2 0 1 6.76 42.57 -.34 -.02 *•56 **-•0**5 65,6 21 ·* 5 32 , FOTAL COEFFICIENTS OF CORRELATION - MEANS ITEM NUMBER 14 B-ST B-TT o ST PB-ST PB-TT þ OPTION 33,33 9,33 -,43 -,69 -,32 -,52 28,1 .84 C 59,67 .72 ,48 -,13 7.19 17,33 1.25 9.4 C -,17 ,24 C 1 44,40 7,15

115

+ 875

MEANS COEFFICIENTS OF CORRELATION ITEM NUMBER 15 TT ST B=ST B=TT PB-ST PB-TT OPTION 5,86 37,71 -,35 -,39 -,44 -,49 43,8 .77 ~ .54 .87 C 59,00 0. 16,50 12.5 C 1.24 . C 1 6,79 43.07 -,21 203 43.8 14 TOTAL

50

32

TOTAL

62,5

TEST	NO 1 ACH	YEVEHEN:	MONITOR	ING TV			,	SUBTES	5 T 5	ADDITI	ON ALGOR	IŤHM'	·	
ITEM	NUMBER 14				COEFFI	ICIENTS	OF CORRE	LATION		ME	ANS '			ť
	OPTION	WT	N	P	PB=ST	P8-TT	B=ST	Bett		ST	, 17			
	, Q	٠,٠	11	34.4	=,40	-,48	52	-,62		5,18	35,18		1	1711
	CI	ì	5	15,6		,47		. 71	C	15,50	55,00			1/4
,	ž	Ö	16	150.0	-,19	,12	-,24	.16		6,75	44.06	1	1	642
	TOTAL		32 ´		• •		•		• ,		, .		ŀ	072
	4 1	•						1		1	,			•
ITEM	NUMBER 17		•			CIENȚS	OF CORRE	LATION		/MI	EANS			
	OPTION	WT	N	Р	PB-ST	P8-TT	B⇔ST	. Bett		S.T	11			
	• • • • • • • • • • • • • • • • • • • •	•		•	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, ,			,					500
	0	0	18	56.3	33	-,43	- 41 [,]	-,54.	,	6,33	38,44		•	583
	' Ç 1 .	1	, 4	12,5	C .75	,55	. 1.50	89	C	16,25	· 59,25		+	241
	5	0	10	31,3	-,18	',06	24	.08	• •	6,40	43,80	•		5
•	TOTAL		35	4	,	_					*			
	•								, 1	à				4
IŢEĦ	NUMBER 18				COEFF	ICIENTS	OF CORRE	LATION		H	EANS			
	OPTION	WT	N	P	P8=S1	PB-TT	8 - 5T	Batt	•	ST	ŤΤ			186
• •	. 0	0	19	59,4	-,25	~,33	~ -,32	-,42		6,68	39,63	5	\	770
	¢ i	1	, 3 ·	9,4				. 87	C	18.00	60.33	.,	7	5/0
ŧ.	2 .	o'	10	31,3	•155	,03	-,28	.05		6,20	43,30	4	•	2.
ک	TOTAL	•	32	•	;			•		• • • •	- ,			
	(*,***				3									12,
•		•	•	•						144				•
ITEH	NUMBER 19			•	COEFF	ICIENTS	OF CORRE	LATION		', M	EANS	ŗ		• .
	OPTION	WT	N	P	PB-ST	PB=TT	B-ST	B-TT	. 4	, ; ST	ŤŤ		, f	263
' •		.0	21	65.6	-,37	•,53				6,43	. 38,38		+'	459
•	C j	1	. 5	6.3				. 84	Ç.	20,50	61,50		•	
	2	. 0	9	28,1	02	,33	-,03	,44	,	7.44	48,67	,		
	TOTAL	1	.32	•		•	•	• •			~ ~ ~			
	. •					¥	•		\sim	•		4		
ITEH	NUMBER 20		٠.		COEFF	CIENTS	OF CORRE	LATION		MI	EANS	\$	•	
	OPTION	ΨT	N ·	` p ,	PB-ST	PB-TT	B-ST	B=TT		ST	TT			359
•					•			r			y * - • •	d	+	265
•	, 0	C	22	68,8	-,26	-,34	-,34	-,44	1.4	6,82	40.14		, =	-
4	C 1	1	5	6.3		,43	1.50	,84	C	20.50				•
	3	0	8	25.0	-,14	1,15	-,20	. ,17		0.50	45,12		¢* '	
	TOTAL		32						i.	,	•	,	. ,	

YEST	NO 1 AGH	I EVEMENT	r Honitoi	ring ty ⁽⁾			,	*SUBTEST	5 ADI	DITION ALGORITHM	* * * * * * * * * * * * * * * * * * *
ITEH	NUMBER 21	,	•		COEFFI	CIENTS	CORRE	LATION	. , , , , , , , , , , , , , , , , , , ,	MEANS	
٠	OPTION	WT	Ŋ	P	PB#ST	PB=TT	B=ST	- 8-TT	S	ŢŢŢ	ا مساد ا
٠	5 C J	0 1	23	71.9 3.1 C 25.0	=.30 .55-		1,36 1,2	-,53 1,15 0	6. 21. 8.	00 72.00	+ 434
	TOTAL		32			,			ŕ	*	
ITEH	NUMBER 22.	ı		,	COEFFI	CIENTS	OF CORRE	LATION		MEANS	
	OPTION	WT -	N	P	P8-ST	PB-TT	B=ST	8-17	S	T	1
•	0 C 1	0 1 0	25 0 7	78.1 .0 C 21.9	.00 .12	→.31 .00 .31			,	32 40.88 00 .00 57 49,29	19
¥	TOTAL		35			•1)	3 9	. ·	+ 58
ITEM	NUMBER 23	,			COEFFI	CIENTS	OF CORRE	ELATION		MEANS .	
	CPTION	WT,	N	р,	PB-ST	PB-TT	8-\$1	В=ТТ	' s	7 77	
	0 [C 1 2 TOTAL	1 2	4 32	84.4 3.1 C 12.5	16 .55 12	4.42 46 22	-,24 1,36 -,19			00 72.00	25
ITEM	NUMBER 24			•	. COEFF:	ICIENTS	OF CORRI	ELĄJION		MEANS	
•	OPTION	WT	N	ę.	PB=ST	PB=TT	8 - 5Ţ	BHTT	\$	TT	58
	0 . C 1 2 TOTAL	· 0 1 : 0	28 0 4 32	8715 .0 C 12.5	.27 ,00 ,27	33 .00 .33	+,42 ,00 ,44			14 41.29 00 .00 75 52.75	98 + <u>85</u>

ERIC Full fast Provided by ERIC

LEKIA	45 4.0 .		1		SUMM	KY IIE	A PINITOI	100					PAUL
TEST	NO 1 ACH!	EVEMEN	ofinom T	RING 7V	•		. •	SUBTEST	T , 6	SUBTRA	ACTION ALG	MKTIRO	· ·
ITEH	NUMBER 1	•		•	COEFFA	CIENTS	OF CORRE	LATION	• • •) · · · Mē	ANS		EM DESCRIPTIONS
.	OPTION	WT	. N ,) - 2 P	P8=5T	P8-T1	B=ST	. B=TT		ST	ΤŢ	<u></u> .	
:	. 0	٥	1	3,1		4.44	-1,28	-1.09		• 00	15.00	ř	٠ /٦
	0.1	1	30	93,8 C	.23	. 20	.40	. +35	Ç	5,87	43,30		61
	2	0	- 1	3,1	•50	.16	,50	4,40		8,00	53.00	. 1	- 42
	T.OTAL	•	32		•		·		ν			. 1	
, Tem	NUMBER >	**		, ,	COSEE	PATENTS	OF CORRS	' LATATON		Ma	ANS		
A) En	MALINEW >	ጀ	4.	•	ÇUEFT (Intellia	AL Admir	1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		116	- Millo	:	,
,	OPTION	WT	* N	Ρ.	PB=ST	PB-TT	8-51	B≜TT		ŞT	77	•	
	0	0	0	0	•00	.00	00	.00	• • • • • • • • • • • • • • • • • • •	.00			56 - 25
	C 1	1	31	96,9 C		44	1,00	.85	C	5,94 ^	43.61	,	- 25
	TOTAL	. 0.	32 1	3.1	+432	-,44	`~1 <u>.</u> 28	=1.09	, .	•00	15,00		22
	IOINL		, 15		1		4.		•				
TTCM	MUNICO A		•		AACEE	Patrutė	OF CORRE	T SLATTON		, M2	eans .	•	
1150	NUMBER 3	¥	. 4		COEFF	i o ren 13	ur connt	Pri Told		· m	THIRD .	•	•
• .	OPTION	, WT	Ν,	P	PB=\$T	PB+TT	B-ST	8-77	1	ŞŢ	TT ,		/2 OA
	0/	٠ ٥	0	.0	.00	¥ .00	00	.00		.00	•00	:	88
	C 1/	1	28	87.5 C	· 33.	, , 23		. 36	C	6.00	.43.71		- 16
,	5,	0	4	12,5	33	+:53	· • 53	*.37		,4.00	35.75	į	
	TOTAL		, 32	. /.				•		, ·		' ·	
	; ;	1)	\ · :					;	n '			Ċ
TEH	NUMBER 4		•	s	COEFF	ICIENTS	OF CORRE	•		" M (EAND	;	
	OPTION"	ΥT	N	P,	 PB•ST	PBLTT	B=\$T	B-TT	•	SŢ	11		
	. 0	٥	· . 5	15.6	•,63	-,33	•.95	~.50		2,80	34.00	,	698 .
	C 1	1	74. 26	81.3 C		, ,50		.72	C	6,54	45,46	J	- 457
1	. 2	0,	1	3.1	-,52			-1.09	٠,	.00	15.00	'	-
	TOTAL		" 32 €		£		, ,	•	į,		,		,
•		,	• '	•	.A	,	<i>.</i> '		•		·		
ITEH	NUMBÉR 5	2	7.3		COEFF	ICIENTS	OF CORRI	ELATION		M	EANS	•	•
	OPTION	WT	N	P	PBést	PB≟TT	8=51	BeTT		ST	* TT*	•	482
		t 0	5	15,6	63	/ •,33	96	-,50		2,80	34.00		- 231
		1	26	81.3 C					C		45,46	,	731
	Ž	Ų	1	3.1	1.4152					.00	15.00		
	TOTAL		1, 32		. \	ŕ		. •			1 ,	1	•
3	3	2.0	۱۵. ۱۱		,	٠.	•	٠,			, , , , , , , , , , , , , , , , , , ,		
LC Sed by ERIC	. 4	₩.U	U	4(•	1		•	•	r.	4
		,		• •	. \ .		-					4	

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	LERIAP Z,0	*		٠,	.34	MUNICE TO	II YIRIAT	,	. '		,	•,	1
. , ,	TEST NO 1 AC	HIEVEMENT	MONITORI	ing ty				SUBTES	T _. 6	SUBTR	ACTION ALG	DRITHM	
	,		i .										
•	ITEM-NUMBER 6	•			COE	FFICIENTS	OF CORR	ELATION		H	EANS	•	*
	i i i	u₹		p	00-	ST PB=TT	B+ST	8=11		ST	TT		•
	A OPTION	WT	N	•	70*	31. E0.411	U~J1	•					
	0	. 0	5	15.6		63 -,33			, <i>-</i>	5.80	34,00	985	•
	C 1	1	25	78.1		80 ,52 42 -,39				, 6,60 , 2,50	45,84 25,50		*
1	S JATOT	0	3 5 :	6.3	•,	4K 6121	-,03	-111	,	i mina	40,00	- 265	
	INIME		3 6 ,			1	• ,	••				-	
873	ITEM NUMBER 7				COE	FFICIENTS	OF CORR	ELATION		·M	EANS		•
e .					00-	ST P8⇔11	B⇒ST	Bett	,	ST	· : TT/	` \	•
·	OPTION	WT	Ν.		75*	'SI F0#()	וניים	5011		•	/		
•	• 0	s 0	9	28.1		2019				5,11		32	
1	C 1		6 '	18.8		62 .65		,94		8,33	58,00	- 5	
	, , , , , , , , , , , , , , , , , , ,	0	17	53.1	Ψ.	31 -,34	38	-,42	•	' 5,18	39,15		
•	TOTAL	5 °	32)					•
	•					·		<u>(</u>			; = 1 NC :		•
•	ITEM NUMPER A				COE	FFICIENTS	OF CORR	ELATION		· M	EANS		
	OPTION	WT	N ·	P	PB•	ST PB-T	r B=ST	BeTT		. ST	TT		1
					,	•					3e co	.74	
	. 0	Ò.	9	28.1		44 = 31		*,50	•	4,33 8,50	35,89 56,00	_ 8	
	, 01	1	. 4	12,5		,52 .44 ,06 .01		.71		5,84	43.16	3	
	2 TOTAL	·-} ·O·	19 32	59.4	ļ	100 101		<i>.</i>	•	-,-		• •	
	INING		76					`				le.	
1	ITEH NUMSER : 9	J			col	Efficient:	S OF CORR	ELATION			EANS		
				٧,							2 77		
'	OPTION	ı WT	N	P	4 PB	ST PB-T	r B-ST	8=77	٠,	\$7	. 11	. 61	
	^ 0	0	8	25.0	′. •	25 4,2	2 -,34	-,29		4,87	38,50	- '.5	
.÷	C 1		. 4	12,5		52 ,3	8 ,84	•56	Ç	8,50	53,25	~~~	
	. 2		20	62,5		.130		05		5,55	42.30	•	
	TOTAL		35			·		į					;
\$.			63			* "						v*	i
`	ITEM NUMBER 1	1	• .	,	CO	EFFICIENT	S OF CORF	RELATION		ŀ	EANS		
•	02710	HT.	N	ρ	PB.	-ST P8-1	T 8-51	B-TT		ST	. ***	72	
	4 (A	i i Namatan	5	15,6		.03 .0	2 .05	.03	i	5,60	43,20	16	
	1 30 C.≱	. 27	5	6.3		36 .4	5 ,70	,89		8,50	62,50	- 28	
200	, 12 , 12	, 0	25	78,1		18 / 4.2				5,56	41.04	Terrorism (CO)	•_
	TOTAL	:	32	,		5						•	n K
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LEKTAP	2.0					SUMMI	RY ITEM	STATIST	102					;	PAGE
TEST N	10 1 ACH	IEVEMEN	OTINCM T	ring 7V				*	SUBTE	ST .6	SUBTRA	CTION ALG	ORITHM	•	
	' (*					h			نه نه	ſ		
ITEM N	UMBER 11	,				COEFF	CIENTS	OF CORRE	LATION		ME	ANS CAR			
,	NOIT90	WT	N N	P		P8-\$1	P8-TT	B-ST	8-77		ST	. 11			
,	0-	0	4	12,5		05	.07	0.A	•11		5,50	44,75			
	C 1	1	i	3.1	C	,29	.24	.72		C	9.00	58.00		83	
	5	Ò	27	84.4	•	10	-,19	-,14		•	5,67	41,85	1	- 17	
	TOTAL		32	•		•••	V		•••		3,01			91	
	.*								•				•		٠.
ITEM N	UMBER 12					COEFF	CIENTS	OF CORRE	LATION		, ME	ANS	r	•	
	OPTION	WT	N	Р		PB=ST	PB=TT	B=ST	B-TT		ST	11	-	· - ·	
	T T	_	_						,	1	•	, '		95	
	0	0	7	21.9	_	-,12	09				5.29	40.86		85 - 59	
	C 1 .	1	26 .	3,1	Ç	, 29	.24	,72	,60	Ç	9,00	58,00		- 59	
	TOTAL	V	24 · 32	75.0		. •00	01	•00	02		5,75	42,62		-	
	IVIAL		JE			•		,			and the second		•		
TTFU N	UMBER 13					-	GTENER.	AR AADDO	1 47100		ue	i esib	:		
ATEM A		•			,	CUEFF	ICIENIA_	OF CORRE	- NOTION		, nt	;ans			_
	OPT10N	ĦŢ	N	, P		PB-ST	P8-TT	B-ST	% B-TT*		ST	TT			,
	- 0	0	12	37.5		e,36	19	-,45	-,24		4,83	39,92		256	i
	· 01	· 1	0	. 0	· C	.00	.00	.00	.00	C	. 00	•00			
•	5	. 0	50	68,5		.36	.19	, 45	,24		6,30	44,40		138	
,	1 OTAL		32	;					•	,				:	
										•					
ITEM N	UMBER 14					COEFF	CIENTS	OF CORRE	LATION		ME	ZŅS		.	
	OPTION	. WT	N	P	,	P8-ST	P8-TT	8=57	B=TT	,	ST `	TT	•	200	
	0	0	14	43.8		•,36	. - ,25	-,46	31		4,93	39,57		388	
•		ì	0	•0		.00	,00	.00	,00	Č	.00	•.00	140	269	•
	c i	0	18	56,3	•	,36	,25	46	,31		6,39	45,17		CHARLES THE PARTY NAMED IN	
	TOTAL	•	38			•		•							
					-		•				•	•	•		•
ITEM N	UMBER 15					COEFFI	CIENTS	OF CORRE	LATION		ME	ENA	þ	•	
1	OPTION	WT	N	P		PB=ST	PB=TT	B=ST	8=11		81	11		913	
	0	0	. 15	46.9		••20	-, 07	•,25	- ,09		· K 99	41 07			
	c 1	. 1	. 13	,0	C	,00	,00	.00	.00	C	.00	41.87 .00	100	804	
•	Ş	0	17	53,1		.20	.07	,25	.09	٠.	6,12	43,47			
	TOTAL		32	,				•	•			- 🗸			

TEST	NO	1	.ACHIEVEMENT	MONITORING	74
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SUBTEST 6 SUBTRACTION ALGORITHM

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ITEM NUMBER 1	6		•		COEFF	CIENTS	OF CORRE	LATION		Me	ANS .		1 ~
00710	דעי או	N	P		PB=ST	P8-TT	B-51	₿≠፻፻		ST	TT		
•	0 0	16	50.0		-,19	-,02	-,23	03	•	0 5,37	V42.44	•	ou i
Ţ, Ţ	1 1		• 0	C	.00	.00		.00		.00		1	846.
	-	•	50.0		,19	.05	,23		•	6.42	43.00	, 98a	393
TOTA	L	35	· .		、		•		,	1	•		013
•	1	*								4		1	
ITEM NUMBER 1	7			, .:	COEFF	CIENTS	OF CORRE	LATION		ME	ANS		, ,
OPT10	N WT	N	 P	•	PB-ST	PB-TT	B-ST	B≖TT		ST	· TT	•	
* * * * * * * * * * * * * * * * * * *	0 0	18	56,3		•,20		26			F 20			920
/ 'c	1 1	0	0	C	•00	.00	95, 	*•18		5,39 00	41.28	F	167
	5 0	14	43.8	•	. 20	.14	26	,18	٠	, 6'5!	44.57	1-	743
TOTA	L i	35			,	***	•	1		,		ζ.	-
			1										9
ITEM NUMBER 1	8 :	•			COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	•	
OPTIO	N WT	. N	P		PR-ST	PB-TT	B=ST	B=TT		ST	TT		
	.,		·			10-11	,			J1	''		726
	0 0	19	59,4		04	. 07	05	-,09		. Б,68	42.05		
* , C		0	•0	C	.00	• 00	.00	.00	Ç	.00	.00	,	186
	2 0		40.6		.04	, Ó7	,05	,09		5,85	43,69		-
TOTA	L	32				١					•		•
									;	•			
ITEM NUMBER 1	9			h	COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		•
OPTIO	N WT	N	P		PB-ST	PB-TT	8+ST	8-11		ST	* 11		,
			71.0				Α'Λ						623
	0	23	71,9	^	. 06	.05	80,	.00	^	5,83	42.67		
C	2 0		.0 28,1	U	.00 .06	.00 -,02	.00 80.	03	v	.00 ~ 5.56	.00 42.33		334
TOTA	-	35			-,00	-104			ı	4130	75133		
1	٦	•			•	٠,	,	,	•	•			
	•												
ITEM NUMBER 2	Ų				COEFFI	CIENTS	OF CORRE	LATION	•	ME.	ANS		
OPTIO	N WT	N N	<i>f-</i> P		PB=ST	PB=77	8+ST	B≈TT		ST	TT		872
	0 0	. `	•		, _ 07	_ 62	10	m A4		E 47	42 54		586
. · · · · · · · · · · · · · · · · · · ·			75.0 .0	Ĉ.	07 .00	 03	10 .00	.#.04 .00	'n.	5.67 ,00	42.54 .00	*****	<u> </u>
	2 0	8	25.0	٧	.07	.03	.10	.04	٧	6.00	43,25		
ATOT. 609	-	32		*	44,	,,,,	, , , ,			- 144			
				,		•				,			

ERIC Full Text Provided by ERIC

LERTAP 2.0		SUMMAR	A TISH SIVITA	1102	•	·	
	MONITORING TY		14-	SUBTEST 6	SUBTRACTIO	N ALGORITHM	, •
ITEM NUMBER 21		COEFFIC	IENTS OF CORR	ELATION	MEANS		
OPTION HT	N P	PB+ST	P8-T7 8-ST	B-TT	· ST	TT	
	;	-,07	0709	•,09	5,68 42	2.32	436
, 0 ,0	25 78.1		,00 .00			•00	- 337
(1)	0 .0 0	. 07	.07 .09			.14	- 001
TOTAL	32	•••	•••	\ \	• •		
IVIAL	46				•	•	
,	,			CLATION	MEANS		
ITEM NUMBER 22	1	COEFFIC	IENTS OF CORP	(STALTON	UCHIA	•	•
OPTION HT	N P	PB=\$T	P8-17 . 8-S1	8=TT 👸	ST	11	
		44	49 - 69		5,68 4	2.32	730
0 0	25 78.1				`\	.00	
0 1 1	10 .0 (00 • 00 • 07		, 09		4.14	- 438
2 0	7 21.9. 32	141		, •••		•	
· TOTAL	JE		`			4	
•				SELATION (, MEANS		•
ITEM NUMBER 23	•	COEFFIC	CIENTS OF COR	JEPH LINK) II E HIVE		
OPTION WT	N P	PB=ST	PB-TT B-S	T	\$1	TT	ENI
	78 1	07	070'	9 -,09	5,68 4	2.32	504
0 0	25 78,1	C .00	.00		•00	•00	- 227
C 1 1	0 .0	.07	.07 .0		6,00 4	4.14	100
TOTAL	35	•		•	•		
14156	••						
			CIENTS OF COR	, RELATION	MEANS	<u>, , , , , , , , , , , , , , , , , , , </u>	1.
ITEM NUMBER 24		COSELLT	ATEUIS AL SÕU	,	·	٠ .	
I TH MOTTO		PB=ST	PB-TT 3-S	T B=TT	.ST ,	11	600
1			.02 .3	1 .02	6.04 .4	2,83	- 481
0 0	•	.23	.00 .0		.00	•00 -	TOI
0 1 1	0 .0	C ,00	•,02. •,3		5.00	2,44	
, 2 0	19 28.1 32	.4149		• • • •			· .
TOTAL	25		١ .	•			3 .

ERIC.

SUMMARY ITEM STATISTICS

TEST NO 1	ACHIEV	EHEN	T MONITOR	ling 7W	,	•		SUBTEST	1	OBJECT	IVES TEST	
ITEM NUMBER	1	ŗ.		٠,	COEFFI	CIENTS	of correl	.ATION,		ME	ANS	ITEM DESCRIPTIONS
. 0PT1	0.พ	WT	* N	P .	P8+ST	P8+T1	B+ST	Batt		51	TT	
<i>'</i>				٨		· 🔥	.00	.00		•00	• 00	,
	1	0	, A	/ .0	•00 •00	0°0, 00,	.00	.00		.00	,00	Numerousness
	3	0) _0 31	100.0		, Ó O	.00		C	9,03	41,32	Writes 0-99
·		1	91	•0		.00	,00	.00	•	.00	00 -	
TOT	-	V			100	• • • • • • • • • • • • • • • • • • • •	,,,	6		•••		
101	M.	٠,	31		1			-		•	•	•
,		,	•									•
ITEM NUMBER	?		•		COEFFI	CLENTS	OF CORRE	_ATION:		ME	ANS .	•
OPT	0N	W7	N	P	PB-ST	PB-TT	B=ST	B-TT		ST	TT	
			-4			10	.50	.14	Ĉ	9,38	42.00	
	1	i	24	77.4			-,77	- 36	٠. ٠	6,00	31,00	Numerousness 'a
•	2	0	- 1	3.2.	•.32 •.32		-,55	39	•	7,33	32,67	Represents 0-99
	3	0	3 3	9.7 9.7	3E	17	-,05	30		9.00	48,00	N
101	8	V	31	7711	1 4447	1.	140	,,,,	Ü		,	
191	ML.	•	-					. •		•	. •	•
y •		•			•	•					-	4
IZEM NUMBER	3				COEFF	ICIENTS	OF CORRE	LATION		ME	ANS	
021)	ON	WT	, N .	P	.PB=ST	PB-TT	B#ST,	B-17		ŚT	TT	
	•		,	۸	•00	.00	.00	.00		₫0• ,	.00	m at fam #aloday /A\
	1	0	5	0. 16.1	-,26	26	•,39	39		B.00"	33,80	Problem Solving (A) Add-part part whole 11-15
(ء : 3	1	20		C ,59	.,29	,76	37	Ç -	9,80	\$44.00	Add-batt hart anote 11-13
		٥	6	19.4	-,48		•,68	4.15		7,33	38,67	
T01	Al	•	31		1	,	•		٤		. •	, ,
, , ,				• 3		•						•
•						ì						
ITEM NUMBER	4		,		COEFF	IÇIENTS.	OF CORRE	LATION .	ı	ME	ANS	u
OPT:	01)	WT	, N	P	PB-ST	P8#TT	v B⊬ST	8=11		ST	TT	
•					, 1,	. •			•	Ø 47	46.67	
4	1	0	15	48,4	.02		,02	,51 - 12	r .	9,07	39,33	Problem Solving (A)
(. s	1	9	-	C Á ,.35		,47 - 54	-,13 -,54	٧	10.00 7,50	30.25	Subt-simple separating 0-99
	3	0	4	12.9	3 4		₩,54	·.27	•	8,00	35,33	
• .	4	Q.	J 310	9.7	-,19	w> 15	, 33	- 121		-144		•
T0:	AL.	. '	310	, <i>•</i>			8) '		,	•	
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•	a 1 ta	e siste e e e e			•	COLFF	icients	OF CURRE	ELATION	,	MEAI	NS	· · · · · · · · · · · · · · · · · · ·
	•	OPTION	٧٢	. 14	. •	PB-ST	P8-11	8=ST	8-11	*	ST	17	
· ·		1 2 C 3 4 TOTAL	0 1	0 0 31 0	.0 .0 100.0 C	•00 •00 •00 •00	.00	.00 .00 .00	.00 .00 .00	Ç	00° 00° 903 00	.00 .00 41.32	Problem Solving (B) Add-simple joining 11-15
	**************************************	CHARCA AN	,	• .	. *							1	
٠.٠٠	AIEM N	ושע UMBER	o .					OF CORRE	LATION		MEAN	NS.	
- · ·		OPTION		N	, P (PB=ST	PB-TT	B=ST	B=TT		ST	TT	
,	y .	C 1 2 3 4 Total	0	9 14 2 6 31	29.0 C 45.2 6.5 19.4	.23 09 .30 34	.16 02	,31 =,11 ,58 =,48	13 .20 03	C	9,67 8,86 11,00 7,83.	39,44 43,57 40,50 39,17	Problem Solving (B) Subt-part part whole-addend 0-99
•	•	4 1	*L. ,	٠,				· .		•	•	•	• •
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•	LERTAP	2.0				CUMMA	-√~ Dú 1464	STATIST	•06		•		
, t i	TEST N	1	1 E V E M E N	IT MONITO	Notna vu	J WHITH	MI TICH	7141471				P	PAGE 17
•		• 1 1011	\$ 10 Y 10 11 10 11	/	AUTHO IM				SUBTEST	1	OBJECTIV	LS TEST	A. ,
	ITEH N	UMBER 59	İ			COEFFI	CIENTS	OF CORRE	LATION		HEAN	5	
u ,	•	OPTION	WT	N	p '	PB-ST	P8-TT	- B-ST	. B=TT		87	TT	, • • • · · · · · · · · · · · · · · · ·
	•	C 1 2 3 4 TOTAL	1 0 0	31 0 0 0	100.0 C .0/	.00 .00 .00	.00 .00 .00	.00 .00 .00	.00 .00 .00	C		41.32 .00 .00	Order, Place Value - Ordering 0-99
					•							. a	·
,1	ITEM NU	IMBER 1288			4	COEFFI	CIENTS (OF CORRE	ATION	,	MEAN	\$ "	2
	•	OPTION	₹ WT	N	, b	PB=ST	P8-TT	B-ST	B=TT		ST	***	• 4
ER Full Text Provide	IC D	1 2 C 3 4	0	50 50 50	6,5 64,5 19,4 .C 9,7	.07 .17 .08	.00 .02 .05	,14 ,22 ,12 ,76.	.01 .03 .07	C	9,25	41,50 41,55 42,67 37,00	Order, Place Value Place Value 0-99

1 0 7 22.632144419 8.00 38.14 Sentence Writing (A) 3 0 0 40 00 .00 .00 .00 .00 .00 .00 .00 .	•
TEM NUMBER AD COEFFICIENTS OF CORRELATION MEANS	
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 1 0 1 3.2 - 11 .10 - 26 .24 8.00 48.00 Sentence Writing (A) 2 0 2 6.5 - 0.0 .14 -0.1 .27 9.00 48.00 Sentence Writing (A) C 3 1 23 74.2 C .39 -0.1 .53 -0.02 C 9.43 41.22 Add-part part whole 0-99 TOTAL 31 LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18 TEST NO 1 ACMIEVEMENT MONITORING TW SUBTEST 1 OBJECTIVES TEST LITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	н
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 1 0 1 3.211 .1026 .24 8.00 48.00 Sentence Writing (A) 2 0 2 6.500 .1401 .27 9.00 48.00 Sentence Writing (A) C 3 1 23 74.2 C .3901 .5302 C 9.43 41.22 Add-part part whole 0-99 TOTAL 31 LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18 TEST NO 1 ACMIEVEMENT MONITORING TW SUBTEST 1 OBJECTIVES TEST LITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	.50
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2 0 2 6.500 .1401 .27 9.00 48.00 Sentence Writing (A) C 3 1 23 74.2 C .3901 .5302 C 9.43 41.22 Add-part part whole 0.99 TOTAL 31 LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18 TEST NO 1 ACHIEVEMENT MONITORING TW SUBTEST 1 OBJECTIVES TEST TEM NUMBER A COEFFICIENTS OF CORRELATION MEANS	, 's - r -
LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18 TEST NO 1 ACHIEVEMENT MONITORING TW SUBTEST 1 OBJECTIVES TEST ITEM NUMBER AII COEFFICIENTS OF CORRELATION MEANS	
LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18 TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER 511 COEFFICIENTS OF CORRELATION MEANS	,
LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18 TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER 511 COEFFICIENTS OF CORRELATION MEANS	
LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18 TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER 511 COEFFICIENTS OF CORRELATION MEANS	
TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	• • ,
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TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	
TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	٠.
TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	<i>:</i>
TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	
TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	
TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	, α
TEST NO 1 ACHIEVEMENT MONITORING 7W SUBTEST 1 OBJECTIVES TEST ITEM NUMBER AND COEFFICIENTS OF CORRELATION MEANS	4.
ITEM NUMBER ALL COEFFICIENTS OF CORRELATION MEANS	
	•
OPTION WE N P PB-ST PB-TT B-ST B-TT ST TT	•
1 0 1 3.2214552 -1.11 7.00 10.00 2 0 1 3.211 .0126 .02 8.00 42.00 Sentence Writing (B) C 3 1 28 90.3 C .44 .53 .72 .86 C 9.29 43.50 Add-simple joining 11-15 4 0 1 3.24244 -1.03 -1.07 5.00 11.00	
TOTAL 31	
ITEM NUMBER 1612 COEFFICIENTS OF CORRELATION MEANS	218.
217 OPTION WT N P PB-ST PB-TT B-TT ST TT	ε I U.
1 0 2 6.5 .07 .07 .14 .13 9.50 44.50 C 2 1 13 41.9 C .43 .26 .55 32 C 9.92 45.15 Sentence Writing (B) 3 0 14 45.220 2.082511 8.64 40.14 Subt-join-addend 0-99 4 0 2 6.55341 -1.0380 5.50 21.50 ERIC TOTAL 31 3	

N P PB-ST PB-TT B-ST B-TT ST TT.

OPTION WT

	•			•		VINIP-I	•••				PAUL
TEST NO 1 AC	HIEVEME	NT MONITO	RING 7W	,	1		SUBTES	ST 1	OBJECT	TES TEST	V
ITEN NÜMBER 13	l'.	1	1.	COEFF	ICIENTS O	F CORRE	LATION	•	М	ANS 😞	: !
OPTION	, Tw	, N	P	PB#ST	. PB+TT	8-57	Batt		97	TT	
C 2 3 4 TOTAL	0	3 24 1 3	9.7 77.4 C 3.2 9.7	.18 .23 21 38	.28 28 28	.31 -,32 -,52 -,66	.05 .38 54	C	10.00 9.25 7.00 7.00	42.33 43.21 26.00 30.33	Algorithms Addition Algorithm
ITEN NUMBER 14	•			COEFF	ICIENTS O	F CORRE	LATION		ME	(ANS	
OPTION	HT	N	ρ	P8+ST	PB- FT	B-ST	8=17		ST.	77	
C 1 2 3 4 Total	0	9 14 · 1 7	29.0 C 45.2 3.2 22.6	.31 .06 .10	.27 07 11 16	.41 .07 .26 63	.36 09 26 22	C	9.88 9.14 10.00 7.87	46.67 40.29 34.00 37.57	Algorithms Subtraction Algorithm

TEST NO 1		EVEHENT	MONITOR	ING 7W	٠				SUBTES	T 2	SENTEN	ÇE WRITIN	NG	FREE RESPONSE
123, 110			,					\						·
ITEM NUMBE	R 1					COEFFI	CIENTS	OF CORRE	LATION	,	ME	ANS		ITEM DESCRIPTIONS
	PTION	WТ	N	P		PB=ST	PheTT	B-ST	B#TT		ST	ŤŤ		,
_						, 4	- 1.1	-1.05	-1.07		1,00	11.00	,	Sentence Writing
	, 0	0	1	3.2	•	*,43	-,44	.83	.85	Ċ	3,10	42,33		Subt-simple separating 11-1:
	6.1	1	30	96.8	C	.43	•44 •00	,00	•00	•	,00	.00		
,	5.	0	0	.0		• • •	.00	194						
	TOTAL		31									ı		
,			25)
ITEM NUMBE	IR 2					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		,
Ċ	PTION	WT	N	ρ		PB-ST	PB-TT	B≠S₹	8=17		ST	11		· .
	۰	0	0	.0		.00	.00	.00	.00		.00	.00	Λ	0
•	Ci	1	11	35.5	C	.83		1,07	,76	Ç	4.00	51,36	"	Sentence Writing
	2	0	50	64.5	•	83	+,59	-1.07	76		2,50	35,80		Subt-comparison 0-99
	TOTAL	M	31.			• •	.• -	·						•
	, , , , ,											•		
ITEM NUMBS	ER 🦘 A					COEFF	CIENTS	OF CORRE	LATION		ME	ANS		
_	OPTION	WT	N	p.		PB=ST	PB-T1	B ⇒ ST	Beţt		ST	TT		
								; E /-	. •.08		2.00	39.00		
	0	· C	1	3.2	_	-,22	03	-,5 4	.17	٠,	3,14	41.75		Senbence Writing
	C 1	1	28	-	Ç	.39	,10	. ,64 -,61	20	٧	3.14	36,50		Add-simple joining 0-99
	5	0	2	6;5		•.31	. •,10	0.01	-164		6 • 0 •	-0100		-
•	TOTAL		31											•
(ITEM NUMBI	ER 4					COEFF	ICIENTS	OF CORRE	LATION		м	EANS		
TIEN MANO	L.N. #													
(OPTION	HT	Ń	P		PB-ST	P8-11	8-\$1	B=TT	. '	\$1	TT		
	, 0	. 0	0	0		, 60	, ,00	. ,00	.00		.00	.00	;	Sentence Writing
	C 1	1	25	80.6	C	.68	58		,83	C	3,32	44,92		Subt-part part whole-addend
•	2	0 .		. 19,4	•	-,68	-,58		84		1.83	26,33		11-15
•	TOTAL	<i>,</i> v	31			•		•						•
	FAINE		. ~•				١							7.

i	•												
EM NUMBER 1				,	COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	ITEM DESCRIPTIONS	
OPTION	WT	'N	P		PB=ST	P8-TT	B-ST	8-11.	•	ST	TT		
TOTAL 0	0 1 0	25 4 31	6.5 80.6 12.9	c	28, .80 74	•.27 .65 •.57	1,14	52 93 91	·C	6.50 10.64 4.00	28.50 45.36 22.50	2 + 4	. *
			ē	-				4					
M NUMBER 2				•	COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	•	
OPTION	WT	T N	P	:	PB-ST	PB+TT	8-51	B-TT		ST	TT		
C 1	0 1 0) 2 26 . 3	6,5 83,9 9,7	C	••32 •81 ••74	14 .63	-,63 1,20 -1,28	28 ,93 -1.15	C	6.00 10.54 3.00	34,50 44.81 15.67	6 + 3)
TOTAL		31	•					•				•	
M NUMBER 3					ÇOEFFI	CIENTS	OF CORRE	LATION		ME	ANS		
OPTION	WT	N	, P		PB-ST	PB-TT	B-ST	B≖TT		ST	TT		
ο .	. 0	2	, 6.5,		37	15	~,72	30		5,50	34.00	•	
C 1 2 Yotal	0	26 3 - 31	83,9 9.%		.75 63	.61 63	1.11	.90 -1.09		10.46	44.69 .17.00	5 🛨 2	
		, ,			ν.			•			,	•	•

COEFFICIENTS OF CORRELATION

COEFFICIENTS OF CORRELATION

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SUBTEST 3

ADDITION FACTS

MÉANS ,

MEANS

9,80 42,37 1,00 10,00

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SUMMARY ITEM STATISTICS

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O.S SATE

ST NO 1

M NUMBER A

OPTION

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OPTION

C 1

TOTAL

M NUMBER 5

C 1

ACHIEVEMENT MONITORING TH

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PAGE 23

À	4		5.	• ,	, ,			١		· ·	.• `		PAGE	24	
2.					SUMMAR	RY ITEM	STATIST							•	•
d i ACHIE	YEMENT	MONITOR	ING TH			10		SUBTEST	3	ADDITIO	N FACTS	•			
	T		٢ -			•		,						~	" 154
UMBER 6	•			عر	COEFFI	CIENTS C	F, CORRE	LATION		MEA	INS.				Δ,
OPTION	нΤ	N .	p		PB-ST	PB-TT	É≖ST	B-TT	,	ST	* • ! •	-1			
	0	0	.0		•00 (.00	00	` 00		.00	.00	. 1.2			
C }	1	30	96.8	Ç	a 5 4	. 45	1.05	.87	C	9.80	42.37	1 + 3			
. 2	Ö	31	3,2	•	54	} ``	-1.32	*1.11		1.00	10.00				
TOTAL	•	31										•			
4		•		•				LATTON		ME/	ANS .		- · · · · ·		
UMAER 7		. ,			COEFFI	CIENTS (JF CURRE	CHITON.		1167	4119	•			
OPTION	*WT .	N	P		P8-ST	.PB=TT	B≠ST	8-11		ST	TŤ.	•			
0		0	. 0		.00	.00	.00	.00		.00	.00	9 + 2			
C 1	ï	28	90.3	C	,74	.66	1,21	1.09	Ç	10.21	44.07 15.67	,5 + ,2		•	1.
. 5	Q	3	9.7		. = , 74	-,6 6	1.28	-1.15		3,00	13101	•		•	,
TOTAL	•	. 31	•							•				•	
		ŕ			COEFFI	CIENTS	OF CORRE	LATION"	/.	ME.	ANS				
IUMBER F		•							1	·ST	. TT	:	•		
OPTION	WT	N	٩		PBST	P8-TT	B-ST	B-TT	. 1	.31	, ''				
, 0	`. O	1	3.2		-,22	-,11	•,55	26	•	5,00	34.00	,			
Ci	ì	\$8·	90.3	C	.51	,43	.84	.70	С	10.00	43.11 . 20.00	6 + 6			
5	0	2	6,5		46	-,4 4	-,89	· - ,86		4,50	60100				•
TOTAL		31			,	•	•								
					COEFFI	CIENTS	OF - CORR	ELATION		ME	zňs:				•
NUMBER 9			_					- (ST	. TT				
0PT 10N	WT	N	Р		PB-ST	PB-YT	B-ST			7					
^ 0	0 ^	9	29.0		-,39	-,26	-,51		^	7,78	36.22 47.83	4 + . 7	•		
C 1	. 1	18	58.1	С	•72	.61 54	.91 -,86		С	11.28 5.50	23.50	4 7 7			•
. 2	Q.	- 4	12.9	\	54	= 4 3 ₹ .	, 5,55	,							٠,
TOTAL 9	P.	31			\rangle						•				•
NUMBER 10	•			-	COEFF:	ICIENTS	OF CORR	ELATION	•	ME	ANS				
OPTION	WT	Ŋ	Р		PB=ST	P8-TT	8- 51	8-11		ST	TT	•	•	ē	
OFILON							-,48	24		7,89	37.78				
- 0	0.	9	29.0 \$8.1	c	-,36 .61	16 .48	,77		C	11.00	48,44	, 7 + 6_			
Ć t	i	.18	12.9	·	-, 40		-,64			6.50	26,25	-		വ	0.0
TOTAL	• .	31						٠						22	O
•		•					2,					ь			
								ė	,	2.					
				. '	•	i ex		-			7				a

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NO 1 ACH	IEVEMENT	HONITO	RING 7W				. (م:	SUBTEST	S ADDITE	ON FACTS		*
NUMBER 11	,			. ~	COEFFI	CIENTS	OF CORRE	LATION	. HE	ANS	, <u>.</u>	
OPTION	₩T	N	^у Р.		PB-ST	PB-TT	. 8-ST	В≖ТТ	ST	ŢŢ	•	
0 C 1 B Total	, 0 1 0	12 15 . 4 31	38.7 48.4 12.9	c	37 .68 47	28 ,57 44	85	36 .71 C	8.17 11.53 6.00	36.83 48.73 27.00	*.	9 + 7
,	,			,	•			•	-			م.
NUMBER , 12			^ .	•	COEFFI	CIENTS	OF CORRE	LATION	ME	AN\$		
OPTION	WT	N	ρ	٠	P8-ST	PB-TT	6~ST	³В≠ТТ	ST	TT.	å ,	•
O C 1 2 Total	0 1 0	3 23 5 31	9.7 74.2 16.1	С	29 .62 51	18 .46 41			7.00 10.57 6.20	34,33 44.78 29,60		6 + 4

SUMMARY ITEM STATISTICS

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P 2.0

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		•		•	٠.,	. ,	,					•		٠, ١
	. ,			, ,	•	`			•	•	• ,		/	
P 2.0				. SUMMA	RY ITEN	STATIST	ICS					PAGE	. / 27	
	CHIEVEMENT	MONTTO	DING TW				SUBTEST	. 4	SURTRA	CTION FA	cts .			
•			N 2 N W	•	d .	• •	040,65	, ,	3007	4110W (M	,			156
NUMBER	1	ı		COEFFI	CIENTS	OF CORRE	LATION	,	ME	ANS	ITEM DESCR	IPTIONS		6
01740	. דע מל	_N	" р'-	P8-ST	PB-TT	8=51	8-77		ST	TT				
C	2 0	1 28 2 31	3,2 90,3 C 6,5	19 .57 55	16 .63 64	46 .93 -1.07	40 1.03 -1.25	c ,	4.00 7.50 1.00	30.00 43.93 10.50	3 - 2			
	•	٠.								· \	•			· ~
NUMBER .	5			COEFFI	CIENTS	OF CORRE	LATION		: ME	ANS '				
οΡŢĴΙΟ	TW NC	N	P	PB-ST	PB-TT	8-ST	8-77	٠.	ST	TT				
C TOTA	2 0	7 22 2 31	22,6 71,0 C 6,5	-,37 ,52 -,32	15 .33 35	-,52 ,68 -,62	21 .44 68	C .	5,00 7,91 3,50	37.71 44.00 24.50	6 - 4			,
•			•		4 , 1						*	•	,	, 7
NUMBER	3 .		d *	COEFFI	CIENTS	OF CORRE	LATION		ME	ANS ,				
OPTIC	י דא מכ	3 N	P	PB-ST	PB-TT	B-ST	8=TT		ST	11	•			ı
Ć	2 0	26 2 31	90.3 C 6.5	25 .61 55	13 .61 64	62 .99 1.07	33 1.00 -1.25	C	3.00° 7.54 1.00	32,00 43.86 10.50	9 - 1			
NUMBER	4 :			COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	4	,		
OPTIC	Từ NC	N	p· .	PB=ST	•	```	. 8-TT		ST	†T	•		•	
C	2 0	2 27 2 31	6.5 87.1 C 6.5	32 .64 55	-,26 .66 -,64		1.01 -1.25		3.50 7.67 1.00	29,00 44,52 10,50	7 - :	, , , , , , , , , , , , , , , , , , ,	, e	•
NUMBER	5			COEFFI	CIENTS	OF CORRE	LATION	٠	ME	ANS				
OPTIO	ON WT	N	. P .		PB+TT		BeTT		ST	. 11		;	•	•
C	2 0	3 26 2 31	9.7 83.9 C 6.5 *	••23 •55 ••55	16 .56 64	39 .81 -1.07	*.28^ *82 *1.25	c	5.00 7.65 1.00	35.00 44.42 10.50	6 - :		230	L.
* 1		•	\ \frac{1}{\bullet}	•	•		•			•	•			•

LERTAP 2.0		ή,			SUMMA	RY ITEM	STATIST	ıc's		•		
TEST NO 1 A	CHIEVENENT	MONITOR	RING 7W	. •				SUBTES	T 4	SUBTRA	CTION FACTS	5
ITEM NUMBER	5 .				COEFFI	CIENTS (OF GORRE	LATION		Mē	ans	•
OPTIO	N WT	, N	P	,	PB=ST	P8-TT	B-ST	8-77		SŢ	· TT	,
,	0 1 ^1	7	22.6 64.5	•	e,53	-,26	-,74	*,37	^	4,14		` ,
O TOTA	2 0	20 - 4 31	13/6		,79 +,47	-,59 -,52	1.08	.76 -:83	٧	8,65 3,50	46,90 24,25	7 - 5 c
,e . (UIX)	•	. 31			,					•	•	
ITEM NUMBER	7 ; •				COEFFI	CIENTS	OF CORRE	LATION	υ ,	: ME	ANS	
0710	N É NT	N·	ρ		P8=ST	PB+TT	B≈ST	B-77	,	ST	TT	۲.
c	0 0	8 8	25.8 64.5	£	-,30	•,06 ,44	∞,41	-,08	c	5.50 8.30	40.12 45,45	10 - 4
, TOTAL	2 0	3 31	9,7	•	37	•,63		-1,09	•	2.00	17.00	10 - 4
		34			•						,	•
ITEM NUMBER			•		COEFFI	CIENTS	OF CORRE	LATION		e , ME	ena;	
OPTIO	TW', 'N	N	P		PB-ST	PB=TT	B+ST	8-17		ST .	, TT	
	0 0 1 , 1	1 6 8	51.6 25.8	,C	••40 •60	-,19	50 .81	-,24	C	5,87 9,87	39.00 48.00	13 - 9
; TOTA	S	7 31	55.6		16	10	55	14		6,14	39.00	
						•				•		
ITEM NUMBER	•	,		;			OF CORRE				ANS	
OPTIO	1	N	; P			P8•TT		B-11		ST	11	, ,
`C	0 1 1	\$ 20	64.5 25.8	C		36 '		11 .48	·C	6.70 9.12	40.50	14 - 8
TOTA	2 0	31	9,7		-,45	-,39	78	·# y 57		3,00	26,33	;
•		2			• ,	١		, , , , , , , , , , , , , , , , , , ,			i	
ITEM NUMBER 1			•				OF CORRE				ANS	
OPTIO		N	p 			PB-TT	8±ST	B=77	,	\$T	YT :	
· C	0 0	11	38.7 35.5	ć	-,27 ,60	•,28 ,61		••36 •78	¢	6.00 9.27	36,83 51.73	11 - 7
	5 0	8 3 1	25,8		» , 3 5	-, 35	* •,48	-,48	•	5,25	33,75	

O,S GATREL					 Э∧ышн	MI TIEN	31616411				;	
TOS NO 1 AC	HZEVEMEN'	Y HONITO	RING 7W					SUBTES	T 4	SUBTRA	CTION FACTS	
ITEM NUMBER 11	•				COEFFI	CIENTS (of Correl	LATION		, ME	ANS	
OPTION	wī	N	P		PB=ST	P8-77	8=51	B-TT		ST	TT	
0 ; C 1 2 Total	1 0	16 10 5 31	51.6 32.3 16.1	¢	-,19 .49 -,36	04 .35 39	-,24 ,64 -,55	05 .45 58	C	6,44 9,00 ,4,60	40.81 47.70 30.20	12 - 4
ITEM NUMBER 12					COEFFI		CORRE	LATION		ME	ANS	
OPTION	דא	N	, Р		P8=51	P8=TY	B-S7	B=11		ST	ŤŤ	
0 C 1 Z TOTAL	1 0	18 8 5 31	58.1 25.8 16.1	Ċ	-,31 ,47 -,15	•.09 .40 •.35	•.39 ,64 •.22	•,12 ,54 •,53	C	6,22 9,25 6,00	40.33 49.87 31.20	17 - 9

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TEST NO 1 ACH	EVEMENT	MONITO	RING 7W				SUBTES	7 5	ADDITI	ON ALGORIT	HM •
TTEM NUMBER 1				COE	FICIENTS	OF CORRE	LATION	•	ME	ANS	ITEM DESCRIPTIONS
OPTION	₩?	N	Р	P8=	7 P8=TT	8=ST	8-11		ST	TT [].	
0	0 "	1	3,2		2744	-,67	-1,07		000	11.00	
Ci	1	28				.64	r97	C	8,82	43,79	31
5	9 .	. 2	6,5	• • •	7 =,40	~, 53	-,78		2,50	55.00	+ 27
TOTAL	•	31				,	4				ماسيت
ITEM NUMBER P				COE	FICIENTȘ	OF CORRE	LATION		МE	ENA	
OPTION,	WT	N	P	PB=		8/157	B=TT		ST	77	•
. 4	٨	. ,	3.2	8	e 27 -,44	-,67	•/1.07	.'	.00	11.00	40
C 1	0	28		C .		74		c .	8,93	43,93	-
5 1	0	2	6,5	u ,		-,67	-,86	•	1.00	20,00	+ 48
TOTAL		31	,• •••	•			•-•		,		
14174	egis	••		1	•					•	
ITEM NUMBER 3	•		Ą	COE	FICIENTS	OF CORRE	LATION		M	ANS	
OPTION	WT	N	, р	P8=	ST P8-TT	8-51	B=TT	•	51	` ;T	25
· с	0 .	S	6,5	r •••	27 -,48	-,53	82	,	2,50	21.00	
¢ 1	ì	27	87,1			,70		C ,	9,07	44.41	+ 22
5	٥	5	6,5	· · · · ·		-,67			1.00	20,00	ر المانيون
TOTAL		31		•	•,	•	- '				•
			•	,					. '		
ITEM NUMBER 4			•	COE	FICIENTS	OF CORR	LATION		. M E	EANS	•
OPTION	WT	N	ρ.	PB⊲	ST PB+TT	B-S7	B-TT		\$1	ŦT	2/2
. 0	0	1	3,2	. ,	27 -,44	67	-1.07		00	11.00	362
·	1	27	87.1					C	9.07	. 44,11	+ 205
5	. 0	3	9.7						2,33	26,33	-
TOTAL	•	31	•••	•		*	-				
14146		,			1			·			
ITEM NUMBER 5	1	•	`	COE	FFICIENTS	OF CORR	ELATION		M	EANS	•
OPTION	HT	N	P	PB≠	ST PB-TT	B+5T	8=11		\$1	TT	417
•	٨		3.2		2744	·67	-1,07	, 4	.00	11,00	+ 212
. 0	0	1 28	90.3		45 .63				8,93	43,93	1 6 6
C 1 2	Ď	5	6,5	v 1				•	1.00	20.00	
TOTAL	٧	31	-14	-1		•			•		•
IA14#	,	4.							•		99

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SUBTEST 5 ADDITION ALGORITHM L.

TEST NO	I AUM.	TEACHEIÁ	I MUNITUR	THO IE					. •	. ,		N _t
ITEM NUMB	BER 6	•	•			COEFFICIENT	OF CORRI	r ELĄTION	ı•	ME	ANS	,
	OPTION	WT	N	P	•	P8-ST P8-T	r B+ST	8=11		\$T	47	
	. 0	.0	··. 1	3,2		-,27 -,4	4 -,67	-1.07		.00	11.00	683
	C 1	1	, 58	90.3	Ĉ	,45 ,6	.,		C	8,93	43.93	
	2	Ö	2	6,5	٠,	-,35 -,4				1,00	₹20.00 -	+ 215
	TOTAL	·	31			• • •		,	,			الشحوميوس
			•			COEFFICIENT	R AF CADD	FLATTON		ák	ANS .	
ITEM NUME	BER. 7					COELLICIENT	S OF CURNI	FP4 : 1014		rı <u>u</u>	,,,,,,,	•
	OPTION	WT	N	, P	•	PB-ST PB-T	T BAST	B=TT		57	• 11	t t
	•	n	1	3.2	٠	·»,27 •,4	467	, =1,07	•	.00	11.00	64
• •	0 C 1	0 1	11		C	74 7			C		53,73	۲٠ ٦
	2	0	19	61,3	•	=,63 =,5		, =,71		5,42	35,74	T :
	YOTAL	•	31		4	•					•	
	_			ر.			ı			•	*	•
ITEM NUME	ER 9					COEFFICIENT	S OF CORR	OLTAJJA BLATJON		, ME	ANS	
	OPTION	WT	• N	۹ ،		PB-S,T P8-T	T B-ST	B+TT		ST	. 11	. \ \ \
	٨	٥	5	6.5		-,25 -,4	749	92		3.00	18,50	1.00
	0 C 1	· 1	11		C	.54 .5			C	12.09	51,09	ተ የተ
	2	ā	18	58.1	•	403		40	٦.	. 6,28	37.89	
	TOTAL	·	31	,		·					•	,
1												
TEM NUM	BER G				•	COEFFICIENT	S OF CORR	ELATION		ME	ANS	
		•	£1	Р		P8=ST P8-T				ST	TT	7
•	OPTION	, W.f.	N	r		/ PD=31	1 . 0-41			٥.	,,	
	0	0	3	9.7		274	a •,47	•.₀83		3,67	22.67	+ 59
1	0 1	1	10	32.3	C	.71 .6			Ç	13,70	53,60	
	, 2	ō	18	58.1		-,51 -,3				5,78	37.61	
٠	TOTAL		31									•
			7.				• -					
ITEM NUM	BED 14			•		COEFFICIENT	S OF CORR	ELATION		MI MI	eans	•
TIEM HOM	יבוי בוי									<u>\</u>		
. d •	NOITSO	WT	"N	P		P8 17 P8+T	T B=ST			51	TŢ	19
•	0	0	₹3	9.7		-,27 -,4	8 .47		.#	3,67	22,67	+ 44
٠.	Ç 1	1	. 8	25.8	C	,76 ,7	1 1,03	,96	¢	15,12	56,50	• 44
004	5	0	20	.64.5		~, 53 ~, 3	5 -,68	· -,45		6,00	38,05	
237	TOTAL		31								1.	•

TEST NO	1	ACHIEVEMENT	MONITORING	7 N
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SUBTEST	R	ARRETTAN	ALGORITHM
440 [63]	- 23	MUDALIAGIS	MI.GUMLING

	,									TOTAL PROPERTY	• 10	•	
ITEM NUMBER 11	,			COEFFI	CIENTS	OF CORRI	ELATION	,	ME	ANS	,		4
OPTION	WT	Ň	p ·	P6=ST	PS=TT	B=ST	B-TT	•	ST	TT			•
. C 1	0	.3	9.7 19.6 C	17	•,30 ,65	-,29 1,13	•.52 •.93	٨	5,33 16,83	29,67 58,00			5/
TATOT	Ğ	31 31	71.0	58	4,37		≯•,48	•	6,14	38,36		+	56, 34
'ITEM NUMBER 12			-	COEFFI	CIENTS	of corr	ELATION	١	\ M;	(ANS			
OPTION	HT	N	Р.	PB+ST	P8-11	B⇒ST	BeTY		ST	11	**		
0	0	* 6	19:4	-,19	-,28	-,28	41		6,00	34,00		•	eo.
C 1	. 0	21	12.9 C 67.7	44	-,21 -,21	1.35 -,58	1.00	Ç	20.00 5.48	62,00° 39,48		+	59 65
TOTAL	•	31	•		·				·	٠.			
ITEM NUMBER 13		•		COEFFI	CIENTS	of corre	ELATION		ME	ANS			
OPTION	WT	N	P	P8=S?	P6-TT	8-\$1	8+11		, ST	TT	1		•
0	. 0	4	12.9	-,13	-,22	-,21	-,34		6,25	34,25			104
C 1 Total	0	23 31	12.9 C	,84 -,54	.63	1.35 73	1.00 +.43	Ç	20,00 6,39	62,00 38,96	•,	+	839
b		•											
ITEM NUMBER 14		şı		COEFFI	CIENTS	OF CORRE	LATION		* ME	ANS			
OPTION	WT	N	P		PB=TT	√8- \$1	B=TT		ST	TT			550
0 C 1	0	5 5	16.1 C	₹,17 ,83	-,27 ,65	-,26 1,25	-,40 ,97	•	6,00	33,60		4	559 236
S	. 0	<u> </u>	67.7	52	-,30	-,68	39	·	18,40 6,19	60,00 38,71			C O O
TOTAL		31		•	1	•			ı				
ITEM NUMBER 15	`			COEFFI	CIENTS	OF CORRE	LATION		ME	ANS			
OPTION	WT	N	ρ	PB-ST	P8=TT	8-51	8-11		ST	11		·	328
0		9	29.0	×.25	-,34		. 0,45		6.00	34,56		+	349
C 1 2 Total	0	5 17 31	16.1 C 54.8	.83 39	.65 •.17	1.25 -,48	.97 -,21	Ü	18,40 6,24	60,00	, ,	•	Mary providence about 2"
14176		٧.									ķ		

TEST NO	1 ACHI	EVEHENT	MONITORI	NG 7W			ů		SUBTES	r 5 ₍	/ ADDITIO	ON ALGORITH	M
ITEM-NUM	18ER 16					COEFFI	CIENTS C	F CORREL	ATION		ME	ANS	•
٠.	OPTION	. WT	N	• Р		PB-ST	PB=TT'	8#ST	B•11		ST	. 11	•
٠	. 0	0	10	32,3		•,35 ,82	•,50 ,52	-,45 1,41	≈ ,66	c	5.40 21.67	32,10 61,33	. 1121
	¢ 1	1	3 18	9,7 58.1	C	-,16	17	-,20	.21	,	7.39	43,11	431
	TOTAL	• •	31				.,	•					+ 272
•				•				· 't					1
ITEM NU	HER 17		1	•		COEFFI	ÇIENTS (OF CORRE	ATION		ME	ANS	
•	OPTION	WT 1	, N	þ		P8-ST	P8+TT	B-ST	B≖TT		ST	11	
		•	12	41.9		~. 20	-,23	-,25	29	. "	6,85	37,92	·
	0	0	. 13 3	9.7	Ç	,60	,43	1,03	74	C	18,00	58.00	594
	Cl	. 0	15	48,4	,	·• , 15	- 03	-,19	04		7,27	40,93	+ 383
• ,	TOTAL	•	31	,						• .		•	
)					_					
ITEH NU	MPER JA	,	, (•		COEFF	CIENTS.	OF CORRE	LATION		ME	ANS	
	OPTION	WŤ	N	p		PB=ST	PB=TT	8-57	B⇒TT		ST	` TT	
	٥	٨	13	41.9	•	-,17	· =.19	~,21	24		7.08	38,54 :	482
	•0 C 1	0 1	, 3	9.7	C	.82	.52	1.41	, 89	C	21.67	61,33	+ 436
	څ پ	Ö	15	48.4		-,32	12	-,40	-,15		6,33	39,73	
,	TOTAL	·	31				19	,					
ITEMONU	MBER 19					COEFF	CIENTS	OF CORRE	LATION		ME	[ANS	
-	OPTION	WT	řΝ	P		PB=ST	P8-TT	8=57	B − TT		· ST	TT	On m
	U (1.00				_			5.4	01		7 12	39,25	347
	0	0	16	51.6		-,19	ن مرار ال	-,24 1,41	-, 21 - , 89	e	7,12	61,33	+ 589
	C 1	1	3	9.7	C	30		-,38	•,18	. •	6,08	39,08	Spiritures.
	2	Q	12	38.7		4030	4414	-100	-114		- 777		
	TOTAL		, 31,				•					.]	
ITEM NU	IMBER 21		, <u>†</u>	1		COEFF	ICIENTS	OF CORRE	LATION		M	EANS	•
	OPTION	WT 1	Ŋ	Р		PB=ST	PB+TT	BaST	BeTT		ST	11	188
	ı	.	16	51.6		-, 05	07	-,06	08		7,87	40,50	+ 295
0.43	0 C: 1	0	• -	4.5	Ç	.75		1,45	,92		23,50	64.00	والمهماني
241	5	Ö	2 13	41.9		32		-,41	51		6,08	38,85	
	TOTAL	-	31	•	į								

LERTAP 2.0	 SUMMARY ITEM STATISTICS	•
war war		7.4
	, a	

LERTAP 2.0		1			SUMMA	RY ITEM	SIATTS!	îńs	, ,	· !			* ."
TEST NO 1 ACH	EVEMENT	' MONITOR	ING 7W		•	n		SUBTES			ON ALGORITH	M '	
ITEM NUMBER 21					COEFFI	CIENTS 0	F CORRE	LATION		HE	ANS		,
OPTION	wT.	4 - N	. P	,	PB=ST	PB⇒TT	B-ST	8-11		ST	77		
1					,						/A 96		996,
. 0	0	20	64,5		-,12	•	•,15	09		7,65	40.70		
Cj	1	5	6.5	C	,75	47	1,45	.92	Ç	23,50	64,00	•	+ 317
2	. 0	9"	29.0		-,28	-, 18	-,3 /	24		5,78	37,67		
TOTAL		31								•			
ITEM NUMBER 22			1		COEFFI	CIENTS C	F CORRE	LATION		ME	ANS		
OPTION	·WT	N	p		PB=ST	PB=TT	B-ST	BeTT	,	ST	TT		
						•			•				69
0	0	24	77;4		27	-,18	-,36	~ ,25		7,33	40.08		
C 1	1	. 5	6.5	Ç	.75	.47	1,45	.92	C	23,50	64,00		34
5	0	5	16,1		-,19	,11	• • 58	-,16		5,80	38.20	•	, Pa
, TOTAL		31		•	•	•				. *		•	+ 3/
;										s de	14 N C		
ITEM NUMBER 23'	,				COEFFI	CIENTS (OF, CORRE	LATION		M	ANS		
OPTION	WT	N	Ρ		PB=ST	PB=TT	B-ST	BoTT		\$1	TT		86
, •		25	80.6		-,32	-,19	-,46	-,28		7,28	40.12		4 7.
. 0	0	20	6,5	c	.75	,47	1,45	,92	C	23,50	64,00		54
C 1	4	. 2	12.9	٠	-,17	-,12	.,27	-,19		5,75	37,50		+ 46
- TOTAL	٧	31	4417		-,.	- ,	1, * 1	. • •	•				+ 46
										,	U.C	,	
ITEM NUMBER 24		•			COEFF	CIENTS.	OF CORRE	LATION		Mį	ANS	•	
OPTION	WT	Ņ	P		P8=ST	PB-TT	9=\$Î	8-11		\$1.	11	,	95
. 0	0	26	83.9		-,30	σ,1 3	- ₀44	19			40.62		99
C 1	ì	2	6.5	C	.75		1,45		C	23,50	64,00		+ 78
5	٥.	3	9.7			* =,23	e a,43	40		4.00	32,33	Ğ	· (U
TOTAL	_	31					•					U	

LERTAP	5.0				SUMM	ARY ITEM	STATIST	ICS				· · · · · · · · · · · · · · · · · · ·	'AGE 37
TEST NO	1 ACHI	EVEMEN	T MONITOR	ING TH			4	SUBTES	i 1 6	SUBTR	ACTION ALGO	MHTIRC	
ITEM NU	MBER 1	•		. •	COEFF	ICIENTS	OF CORRE	LATION	•	H	EANS	ITEM DESCRIPTIONS	164
t .	OPTION	wT	N	P		PBeTT	8 - ST			ST	TT		
	• • • • • • • • • • • • • • • • • • • •		,,	'	15 01	1 1977 (1	040.	,,			•		
	. 0	0	2	6,5	47	-	-,93	-,72		.50	23,50	94	, ,
	,C 1	1	- 26	83.9 C			,86	.69		5,23	43,92		
	TOTAL	. •	3 . 31	. 9,7	-, 33	. •.28	∞,57	-,48	•	2,33	30.67	- 60	
	10111		•				• ,			•			
ITEM NU	MBER P		;·		COEFF	ICIENTS	OF CORRE	LATION		M	EANS	•	,
	OPTION	WT.	N	p	72-20	₽B≈TT	B-ST	8-11		ST	TT		
		., ,	,,	•	FQ-31	ruwii	g-ui					70	
	0	0	3	9.7	· 47	4,68	- .82	-1.07		1,33	17,33	78	
	C 1	1	24	77.4 .C				,67	Ç	5,29	64.62	- 64	*
,	2	0	4	15.9	53	 06	-,37	-,09		3,25	39,50		
•	TOTAL		31					,		,		•	
- !	· . I				•	•						•	
ITEM NU	MÁSR 9				COEFF	ICIENTS	OF CORRE	LATION	ı	Ņ,	EANS .	· ·	*
, , , , , , , , , , , , , , , , , , , ,	OPTION	WT	N	P	P8=ST	PB=TT	B-ST	Batt		57	. 11	48	
•	0	0 -	5	16,1	62	-,64	-,93	-,97		1,40	22,80	2.7	ŋ
	Ç î	ì	ż3	74.2 C		_	,92	.85	Ċ	5,57	46.09	-21	•
	2	0	3	9.7	• . 23		m,41	-,25		3,00	35,67	**************************************	
	TOTAL	ļ	*31					,				·	4
. 😯		1			•			,				5 .	
ITEM NU	MBER ,4				COEFF	ICIENTȘ	OF CORRE	LATION		M	EANS	•	١
	OPTION !	ИT	, N	P	P8-ST	PB=TT	8=57	B#TT-		, ST	77	/ 21	
	·· 0	0	7	22,6	-,62	-,53	87	-,74		00و2	28,86	, 654	
•	Cl	1	₹ 55	71.0 C			1,02		Ç	\$\$7.7	46,09	- 523	• • • • • • • • • • • • • • • • • • • •
	5	0	2.	6.5	36	18	w _* 70	•,36		1,50	32,50	-	
	TOTAL		. 31										
	1										7		
ITEM NU	MBER 5	•		* .	COEFF	ICIENTS	OF CORRE	LATION		M	EANS		_
	OPTION	WT	N	P	P8-ST	P8=T1	8-51	BeTT		ST	11 %	582	·
	0.,	٥	7	22,6	69	 59	-,96	-,82		1,71	27,57	1 - 222	010
	C 1	1	20	64.5 C	, 80	,57	1.02	.74	Ç	6,00	46.70	Controllina	246
245	. 2	0	4	12.9	-1.28	90, به	-,44	-,14		3,00	38,50	•	\$
440	TOTAL		31		i		_						
	•						4						

ħ.	c	n		A	n	2.	۸
	۰	N	Ŧ	Δ	ν	· 2	Π

SUHMARY ITEM STATISTICS

PAGE 38

ERIAM C.U					SUMMA	ARY ITEM	STATIST	105				PAG
TEST NO 1 ACE	HIEVEMENT	MONITO	RING 7W		,			SUBTES	T 6	SUBTRA	ACTION ALGORITHM	
TTEH NUMBER 6		V			COEFFI	CIENTS	OF CORRE	LATION		· ME	ANS	
OPTION	WT	N.	ρ		PB#ST	P8-TT	B=\$1	B-TT		S 7	TT	
0	0	7	22,6		-,69	-,59	 96	-,82		1.71	27,57	
C i		17	54.8		171				Ċ		48.53	000
à	Ō	7	22,6	Ü	-,15		-,21	- 55	•	4,00	37.57	. 778
TOTAL	•	31	•			•••	•	**-		,,,,	2,,5,	- 676
ITEM NUMBER 7					COEFFI	CIENTS	OF CORRE	LATION		MA	ANS	• идаминия
					9.			,		, ,	•	•
OPTION	ΨT	N i	p .		PB=ST	PB-TT	B=ST	B=TT		ST	. ** **********************************	
, 0	0	5	16.1		-,54	-,67	-,82	-1.01		1,80	22,00	63
C.1	ě	5	16.1	Ç	.37	.21	,56	•32	C	6,60	47.40	_ 11
, , , , , , , , , , , , , , , , , , ,	. 0	21	67,7		.13	.36	,17	.47		4,86	44,48	
TOTAL	,	31			1							
			F			·		1				
ITEM NUMBER A	•		•		COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
OPTION	WT	N	Ρ,		P8-5T	PB+TT	B⇒ST	8 •1 1		. ST	TT	0 5
0	. 0	٠ 8	25,8		-,49	e,52	* ,66	71		2,75	30,12	45
Cl	1	2	6.5		.38	35	.75	-68	c	8,00	58.00	- 7
5 1	;	51	67.7	•	.25	,31	33	.40	•	5,05	44.00	-
TOTAL	•	31			144	,	,,,,	• • •		-,,,,		
ITEM NUMBER 9	,	t			00855	: CIENTS (NE PODDE	LATTAN		uc	ANS	
Tigh Nonpen 4					· VVEIT I	OTENIS	at panns	PHITOH		mg	, mire	•
OPTION	WY	N	P		PB=ST	PB-TT	8-57	8+TT		ST	TT .	77
0	0	5	16.1		47	5 0	-,70	 75		2,20	27.00	- 8
C 1	1	4	12.9	C	.52	35	.83	,55	C	7,75	52,75	Viggerand
5	0	, 55	71.0		e401.	.15	01	.19		4.64	42,50	
, TOTAL		31			•,	X.					``,	
ITEM NUMBER 15					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
OPTION	w?	N	P			PB=TT	8-57	Batt				_
051104	# ·		r		FDF31	704(1	0431	0411		\$T	, *†	31
0		8	25,8		48	-,5 3	•,62	72		2.87	29.87	- 15
0_1		0	• 0	C		, •00	.00	.00	¢	.00	.00	اليد ا
. 2	0	23	74.2		.46	,53	,61	,72		5,26	45,30	-3
TOTAL		31			•	•						
JC.	24	7	•		,	• ;						
6~												

					3.41.11	ent åter	I SIMILOI	Tori				. PA
TEST NO 1 ACE	HIEVEMEN	T MONITO	RING 7W					SUBTE	ST 6	SUBTR	ACTION ALGOR	ITHM
ITEM NUMBER 11					COEFFI	CIENTS	OF CORRE	LATION		, н	EANS	
OPTION	WT	Ņ	P		P8=5T	PBoTT	B*ST	B≖TŢ		ST	TT .	
0	0	11	35,5		-, 59	-,54	-, 76	69		2,82	32,18	wa 199
C 1	1	0	,0	C	.00	.00	,00	.00		.00		77
5	ō	20	64.5	•	.59	.54		69		5,65	.00 46.35	- 20
TOTAL		31			107	104	1,0	, 101		3,03	40100	- 29
ITEM NUMBER 12					COEFF	ICIENTS	OF CORRE	LATION		Mj	EANS	
OPTION	WT	N .	P		PB+ST	PB⊎TT	8=51	'B ∸ TT		, ST	TT	
^	٨	10	22.2								.	72
0 C 1	. 0	10	32,3		•.46	-, 46		-,60		3,10	32,90	l fin
5	0	51 0	,0 67.7		.00	.00	.00	.00	Ç	.00	.00	- 63
TOTAL	v	31	0141		.•46	,46	•60	,60		5,38	45.33	-
. 1410.		31										
ITEM NUMBER 13			:		COEFF	CIENTS	OF CORRE	LATION		M	ANS	
OPTION	~tWT	N	Р		P8-ST	PB-TT	8-57	8-11		57	11	11.50
0	0	10	32.3		••53	. ,51	-,68	~. 67		2,90	31.90	453
Çı	i	0	,0	Ċ	.00	.00	,00		C ,		.00	- 215
5	Q	21	67.7	•	,53	,51	.68	,67	•	5,48	45,81	Name and Persons a
TOTAL		31			,	151	100	441		5440	42101	
•												•
ITEM NUMBER 14					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
OPTION	WT	N	P		P8+ST	PB≖TT	B=ST	B⊷TT		ST	TT	950
0	0	9	29.0		40	49	-,53	-,65		3,22	31,56	- 219
Cl	1	0	.0	C	.00	•00	.00	.00	C	.00	.00	
5	0	22	71.0		.40	.49	.52	,65		5,23	45,32	
TOTAL	•	31										
ITEM NUMBER 15		•	•		COEFFI	CIENTS	UF CORRE	LATION		ME	:ANS	
OPTION	ИT	N	. р		PR=ST	PB-TT	B≖ST	B= 7 7		ST	TT	494
						, 5-11	#** # (11		JI	11	- 336
249	\$	11	35.5		-,44	49	 57	-,63		3,27	33.00	Research to the same of the sa
C 1	1	1	3.2	C	.43	.33	1.04	.80	Ç	10.00	64.00	
	0	19	61.3		.28	, 36	,36	446		5,16	44.95	
TOTAL		31					•					



TEST NO 1 ACHIEVEMENT MONITORING TW

SUBTEST 6 SUBTRACTION ALGORITHM

	ANS			LATION	F CORREL	CIENTS C	COEFFI		,		•	TEM NUMBER 16
	TT	st		8-17	B=ST	P8-TT	PB=ST		P	N.	WT	OPTION
	31.40	3,00		71	m, 64	•,54	-,49		32.3	10	Q	0
741	•00	.00	C	,00	.00	•00	.00	C	• 0	0	i	0.1
	46.05	5,43		.70	.64	. 54	.49		67.7	21	0 '	à
284		:					•	·		31		TOTAL
•	ANS	H		LATION	F CORRE	CIENTS (COEFFI	1				TEM NUMBER 17
	11	, 51		8-11	8-51	PB-TT	PB=ST		P	N	WT	OPTION
914	32,42	3,50		·•.71	-, 50	•,56	40	٠.	38,7	12	0	0
- EIA	.00	,00	C	.00	•00	.00	.00	Ç	•0	` 0	1	C 1
- 540	46,95	5,37		,71	•50	.56	• 40		61.3	19	0	5
							•		,	31	鬼	TOTAL
	;ans	, ME		LATION	F CORRE	CIENTS (COEFFI					TEM NUMBER 18
/ m	TT	ST	,	8=11	B-ST	PB+TT	P8-ST		P	n N	71	OPTION
617	33,53	3,40		 75	-,66	 60	53		48,4	15	0	o
- 393	•00	.00	¢	•00	.00	.00	.00	¢	(10	0	1	C i
Completelings	48.62	5.81		• 75	.66	.60	,53		51.6	16	0	2
	,	,								31	•	TOTAL
	ANS	ME		LATION	F CORRE	CIENTS (COEFFI				Ũ	ITEM NUMBER 19
428	ŢŢ	ST		8-11	B=ST	PB-TT	P8=ST		P	N	WT	OPTION
- 200	34,94	3,56	. ,	 65	-,61	_ K2			E1 4			:
207	.00	•00	C	.00	,00	52	.00	^	51.6 .0	16 ′	i ()	0
	48,13	5,80	•	,65	,61	,52	.49	v	48,4	0 1 5	1 .	C 1
	i	_		•	•	,	•••		4444	31	•	TOTAL
	ANS	M		LATION	of cohre	CIENTS !	COEFFI					TEM NUMBER 20
661			•									TIEM MONDEY EN
– Ц/2	11	ST		8-11	B=\$T	PB-TT	P8#5T		P	N	WT	OPTION
707	34,75	3,81		•,67	-,47	•.54	-,37		51.6	16	0	0
	.00	.00	C	.00	.00	.00	.00	C	• 0	0	1	C 1
	48.33	5,53		_,67	.47	.54	.37		48.4	15	0	2
				₹						31		TOTAL
						•				31	251	TOTAL

TESY F	NO 1 ACH	IEVEMENI	MONITO	RING 7W					SUBTES	ST 6	SUBTRA	CTION AL	GORITHM	
ITEM P	NUMBER 21					COEFF	CIENTS	OF CORRE	LATION		ME	ANS	1	
	OPTION	WT	, N	p		PB=ST	PB=TT	B-ST	₿₩₹₹		ST	77	٠	
	0	0	19	61,3		44	-,56	-, 56	-,71	•	3,84	35,74		100
	C 1	1	0	.0	¢	.00	.00	.00	.00	Ç	.00	.00		685
	2	0	15	38.7		.44	.56	.56	.71		5,92	50.17		- 596
	TOTAL		31								•			(ر) ا (ر) المستحدية
ITEM N	NUMBER 22					COEFFI	CIFNTS	OF CORRE	LATION		MF	ANS		
,			·•			000.7	.0121110		M 8 411		.,,	n//V		
	POPTION	WT	N .	ρ.		PB+ST	PB+TT	8-51	B-TT		ST	TT	1	
•	0	0	21	67,7		-,44	-,60	-,57	- ₹79		3,95	36,05		
	Ci	1 -	0	,0	C	.00	.00	.00	.00	Ċ	,00	,00		620
	2	٥	10	32.3	•	.44	,60	,57	.79	•	6,10	52,40		
	TOTAL		31			•••	,,,,		•,,	7		- 	•	<u> - 545</u>
•	٠.					•			•					
ITEM N	NUMBER 23					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		
	OPTION	WT	N	P		PB-ST	PB-TT	8-57	8=77		S٢	TT		\
	0.	0	21	67,7		-,44	-,60	•,57	-,79	•	3.95	36,05		*
,	C i	1	0	.0	C	.00	.00	.00	.00			00		701
	2	0.	10	32.3	•	.44	,60	57	,79	•	6,10	52,40		- K99
	TOTAL		31			• •	• • •	•						distributions .
į.														
ITEM N	NUMBER 24		•			COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		
	OPTIO#	WT	. N	P	,	PB=ST	P8-TT	8-51	Bett		ST	ŢŢ		
ĺ														400
س.	0	0	<u>አ</u> ዓ	61.3		•.35	w ₄ 47	-,45	* ,60		4,00,	36,58	• •	047/
•	0 1	1	C	.0	C	, .00	•00	,00	.00	C	.00			- 4/6
	7	0	12	38,7		.35	.47	.45	.60		5,67	48,83		* GLYMACH Zileum AMPTRI
	TOTAL		31											•

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L	. C. I	н.	MP.	•	a []

SUMMARY ITEM STATISTICS

PAGE 16

					Q.4.11.15	1111 (115)	1 SIRIETI	• • • •		•	1 70
TEST NO 1 ACHI	EVEHENT	MONITO	RING 8U					SUBTEST	1 OBJEC	TIVES TEST	
ITEM NUMBER 1	•	•	V		COEFFI	CIENTS	OF CORRE	LATION	M	EANS	ITEM DESCRIPTIONS
OPTION	WT	N	P		PB-ST	PB=TT	8-57	B=TT -	ST	TT	
1	0	1	5,9		~.15	/ -121	-,39	54	9,00	33,00	*
C 5	1	28	82,4	C	1 ,26	,17	,38	,24 C		49.75	Numerousness
3	Ō	5	14.7	•	21	-,08	•,32	•112	9.80	46.40	Writes 0-99
; `♦ '	0	0	.0		.00	.00	,00	,00	,00	.00	,
TOTAL		34									
			٠,					•			•
ITEM NUMBER 2			à		COEFFI	CIENTS	OF CORRE	LATION	M	EANS '	.)
OPTION	WT	N	P	,	P8-ST	PB=TT	B-ST	B=TT	ST	ΤŢ	
1	0	0.	.0		.00	.00	,00	.00 .	,00	•00	
2	0	0	0		: .00	.00	.00	.00	•00	•00	Numerousness
C 3	1	34	100.0	C	.00	.00	.00	,00 C	10.88	48.76	Represents 0-99
4	0	0	• 0	-	.00	.00	ďo	.00	.00	•00	
YOTAL		34				• • •				•••	
ITEM NUMBER 3					COEFFI	CIENTS	OF CORRE	LATION	М	EANS	,
OPTION	/ WT	A 1	þ		, noc*	65 89	n c7			•	
QF1JON	Wi	N	•		PP=31	PB-TT	B#ST	B=TT	\$1	TT	
1	0	0 .	•0		.00	.00	.00	,00	.00	•00	•
5	0	1	2,9		40	•,23	-1.00	· * • 57	6.00	32.00	Problem Solving (A)
C 3	1	32	94.1	C	.40	•51	.71	,37 C	11.09	49,44	Subt-simple separating 11-1
4	0	1	2.9		15	- ,06	39	-,16 ₁	9,00	44.00	4
TOTAL		34								• .	,
ITEM NUMBER 4					COEFFI	CIENTS	OF CORRE	LATION	M	EANS	
OPTION	WT	N ·	Þ		PB=ST	P8 • T.P	B=ST	8-77	ST	, TT	•
C 1	1	26	76.5	C	,42	.45	,58	,61 C	11,38	51,96	1
5	Ō	1	249	*	-,15	09	m,39	-,23	9.00	42.00	Problem Solving (A)
,e ² 3	0	5	. 14.7		33	-,37	- 50	. 56	9,20	37,40	Subt-comparison 0-99
4	0 ,	3	5,9		16	-,19	-,32	38	9,50	39,00	
TOTAL		34									

# 1 m (1997)					ÇOCT 1	V 1 4 1 4 1							
	OPTION	WT	N	Þ	P8+ST	P8+11	B-ST	8=17		ST	TT	· 4	٠,
	1 2 C 3 4 Total	0 0 1 0	2 0 32 0,	5.9 .0 94.1 C	40 .00 .40 .00	.00 .23	79 .00 .71	46 .00 .41 .00	C	7,50 .00 11.09 .00	37.00 .00 49.50 .00	Problem Solving (B) Subt-join-addend 11-15	
ITEM NU	MBER 126				COEFF	ICIENTS (F CORRE	_ATION		. ME.	ANS .		170
	OPTION	¥T	N	P	PB-ST	P8=TT	8-51	B=TT		ST	TT	1	
•	C 1, 2, 3, 4	1 0 0	27 6 0 1	79,4 (17.6 .0 2.9	.28 -,23 ,00 -,15	-,20	.39 33 .00 39	,39 •.30 ,00 •.54	C	11.19 9.83 .00 9.00	50.59 43,17 .00 33,00	Problem Solving (B) Add-simple joining 0-99	
	IOINE		34	,						,			
1	,		,) B		•		•					
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LERTAP		,		~	SUMM	ARY ITEM	STATIST	105		•	•	PAGE 1	.7 , .
TEST NO	D 1 ACH	IEVEMEN'	r MONITO	RING BU	7		·	SUBTEST	1	OBJECT	IVES TEST		
ITEM N	JMRER ,8'				COEFF	ICIENTS	OF CORRE	LATION		ME	ANS		
	OPTION	WŢ	N	P	PB=ST	P8+TT	8+ST	B=TT		ST	TT.		
	1 2 C 3 4 OTHER TOTAL	0 0 1 0	1 4 28 0 1 34	2.9 11.8 82.4 .0 2,9	15 32 C .44 .00	.26	.39 .52 .64 .00	•.16 •.42 •.44 •.00	C	9.00 9.00 11.32 .00 8.00	44.00 39.75 50.57 .00 39.00	Order, Place Value Ordering 0-99	
47F4 EU))			COFFE	CIENTS	o. corre	LATION		MF	ANS		258
	کیر UMBER OPTION	s WT	N	P .		PB-TT	B-ST	BeTT		ST	77		NO O
257			20 N	58,8	••19		-,23	».Ž3		10,55	46.80		
OC.	1 C 2 3 4	0 0	6 3 5	17.6 8.8 14.7		24. ' 80. (.03 06 50	,72 ,14 =.51	C .	13.50 10.67 9,20	62,33 52,00 38,40	Order, Place Value Place Value 0-99	
wided by ERIC	TOTAL		1 34			٠	,				• n		

ITEM NU	IMBER X				COEFF	ICIENTS	OF CORRE	LATION		ME	ANS	
	OPTION	HT	N.	, р	PB-ST	20-TT	8-ST	8-11	'n	ST	TT	P P
•	C 2. 3 4 TOTAL	0 1 0 0	0 34, 0 0 34	100.0 C	.00 .00 .00	.00 .00 .00	00. 00. 00.	.00 .00 .00	C	.00 88.01 00	.00 48.76 .00	Sentence Writing (A) Add-part part whole 11-15
	IVIAL		1								э	•
ITEM NU	MBER 710				COEFF	ICIENTS	OF CORRE	LATION		. ME	ANS	
	OPTION	WT	N	P	P8-51	P8-TT	B-ST	8-11		ST	TT	
	. 1 2 C 3 4 Total	0 0 1 0	2 1 31 0 34	5.9 2.9 91.2 C	40 23 .47	21 17 .28	79 59 .78	42 44 .46	C	7,50 8,00 11,19 ,00	38.00 36.00 49.87	Sentence Writing (A) Subt-simple separating 0-99
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			, refer	,			•		1			
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LERTAP	2.0				SUMM	ARY ITEM	STATIST	ics				PAGE 18
TEST NO) 1 ACHIE	VEHEN	T MONITO	RING BU			•	SUBTES	T 1	OBJECT	IVES TEST	
ITEM NU	IMBER All				COEFF	icients :	OF CORRE	LATION		ME	ANS	
	JPTION .	WT	N ¹	P	PB=ST	PB=TY	8-57	B¥TT		ST	77	
Y	1 2 C 3 4 TOTAL	0 0 1 0	1 18 14 1	2.9 52.9 41.2 C 2.9	-,23 -,60 ,72 -,07	17 39 .51 17	*,59 •,76 •,91 •,18	44 49 .65	C	0.00 9.67 12.71 10.00	36,00 44,06 56,64 36,00	Sentence Writing (B) Subt-join-addend 11-15
		fi.										

8~\$T

.00

-.78 .-.30 .88 .54 C

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20.6 73.5 C 5.9

25 2 0

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MEANS

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43,43

51,88 28,50

.00

57

8,57

11,72 8,50

ITEM NUMBER 3/12

OPTION

Sentence Writing (B)
Subt-part part whole-addend

0-99

TEST NO 1 ACHI	EVEMENT	r Monitor	IING BU				SVBTEST	Γ 1	OBJECT	IVES TEST	
ITEM.NUMBER 13				, COEFFI	CIENTS 0	F CORRE	LATION		ME	;ANS	
OPTION	WT	N	ρ	I PB#ST	P8-TT	B=ST	B=17		ST	TŢ	
1	0	3	8.6	· +142	-,40	74	-,72		8,00	32,00	
C 5	1	29	85.3	C .48	46	° ,72.	.70	C	11.31	51.24	Algorithms
3	0	1	2,9	23		-,59	= .44		00,8	36.00	Addition Algorithm
4	0	1	2.9	07		18	30		10.00	40.00	110071 / 011 111707751100
TOTAL		34	1.50								
ITEM NUMBER 14				COEFFI	CIENTS 0	F CORRE	LATION	, <i>'</i>	ME	ANS	
OPTION	WT	N	, b	P8-ST	PB-TT	8=ST	B ≖ TT		ST	TT	
1	0	3	8.8	-,32	-,20	,57	· * , 35		8.67	40.67	
. 2	Ú	3	8.8	+.32	23	*. 57	40		8.67	39,33	Algorithms
С 3	1	24	70,6	C .51	,50	, 67	,66	C	11,58	52,92	Subtraction Algorithm
. 4	0	4	11.8	15	-,33	~, 25	-,54		10.00	37,00	
TOTAL		34									

S'AMMARY ITEM STATISTICS

TIEM NUMBER COEFFICIENTS OF CORRELATION NEANS TIEM DESCRIPTIONS	TEST NO 1 ACH	IEVENEN	F MONITO	RING BU					SUBTES	5T	2 SENTER	NCE WRITING	FREE RESPONSE
OPTION WT N P P8-ST P8-TT B-ST 8-TT ST TT 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ITEM NUMBER 1					COEFF	CIENTS	OF CORRE	LATION		M 8	ENA:	TTEM DECCUIPTIONS
C 1 1 10 52.9 C .88 .60 1.10 .76 C 3.61 56.11 Sentence Writing 2 0. 16 47.18880 -1.1076 1.94 40.80 Subt-comparison 11-15 ITEM NUMBER ? COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT	OPTION	WT	N	P		P8+ST	PB=TT	8-57	8-77		ST	TT	TIEM DESCRIPTIONS
TOTAL 34			•			.00	.00	,00	.00		.00	•00	
TITEM NUMBER P COEFFICIENTS OF CORRELATION MEANS	•				Ç			> 1,10	.76	C	3,61	56.11	Sentence Writing
ITEM NUMBER 2 COEFFICIENTS OF CORRELATION MEANS		0.		47.5		-,88	-,60	-1.10					
OPTION WT N P P8-ST P8-TT 8-ST B-TT ST TT 0 0 0 0 .0 .00 .00 .00 .00 .00 .00 .00	TOTAL		34										
OPTION WT N P P8-ST P8-TT 8-ST B-TT ST TT 0 0 0 0 .0 .00 .00 .00 .00 .00 .00 .00	ITEM NUMBER >					COFEE			LATTAL		,	· · · · ·	
1724 NUMBER 3 32 94.1 C .08 .02 .15 .04 C 2.84 48.69 Add-part part whole 0-99	• • · · · · · · · · · · · · · · · · · ·					COEFFI	1010413	OF GURKE	PAITON		ME	CNA,	,
C 1 32 94.1 C .08 .02 .15 .04 C 2,84 48.69 Add-part part whole 0-99	OPTION	WT	N	P		P8*S1	P8+TT	8-57	8-77			77	. 0
C 1 1 3 32 94.1 C .08 .02 .15 =.04 C 2.04 48.69 Add-part part whole 0-99 TOTAL 34 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT O 0 3 6.816 .1528 .27 2.33 55.00 C 1 1 14 41.2 C .84 .62 1.07 .78 C 3.79 58.29 Sentence Writing 2 0 17 50.974699387 2.12 39.82 Subt-join-addend 0-99 TOTAL 34 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST C-TT ST TT O 0 1 2.933048409 1.00 45.00 Sentence Writing 2 0 1 2.915063616 2.00 44.00 Sentence Writing 3.11-15	v	0	0	.0		.00	-00	.00	- 0.0			۸۸	_
2 0 2 5.908 .0217 .03 2/50 50.00 Add-part part whole 0-99 TOTAL 34 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 3 6.816 .1528 .27 2.33 55.00 2.17 50.0 Sentence Writing 2 0 17 50.0174699387 2.12 39.82 Subt-join-addend 0-99 TOTAL 34 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST C-TT ST TT 0 0 1 2.933048409 1.00 45.00 Sentence Writing 2 0 1 2.915063616 2.00 44.00 Sentence Writing 3.00 3.00 3.00 3.00 3.00 3.00 3.00 3.0	Ci	1			Ċ					c			Sentence Writing
TOTAL 34 ITEM NUMBER 3 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 0 0 0 3 6.816 .1528 .27 2.33 55.00 Sentence Writing 2 0 17 50.274699387 2.12 39.82 Subt-join-addend 0-99 TOTAL 34 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST C-TT ST TT 0 0 1 2.933048409 1.00 45.00 Sentence Writing 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15 2 0 1 2.915063816 2.00 44.00					•					٧			Add-part part whole 0-99
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT COMPANDED COMPAND	TOTAL		34	•		***	***		,,,		الامع		,
OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 0 3 8.816 .1528 .27 2.33 55.00 C 1 1 14 41.2 C .84 .62 1.07 .78 C 3.79 58.29 Sentence Writing 2 0 17 50.374699367 2.12 39.82 Subt-join-addend 0-99 TOTAL 34 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST C-TT ST TT 0 0 1 2.933048409 1.00 45.00 Sentence Writing C 1 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15)	'	
OPTION WT N P P8-ST P8-TT 8-ST 8-TT ST TT 0 0 0 3 8.816 .1528 .27 2.33 55.00 C 1 1 14 41.2 C .84 .62 1.07 .78 C 3.79 58.29 Sentence Writing 2 0 17 50.374699367 2.12 39.82 Subt-join-addend 0-99 TOTAL 34 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P P8-ST P8-TT 8-ST C-TT ST TT 0 0 1 2.933048409 1.00 45.00 Sentence Writing C 1 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15			•				•				$\gamma /$		
0 0 3 8.816 .1528 .27 2.33 55.00 C 1 1 14 41.2 C .84 .62 1.07 .78 C 3.79 58.29 Sentence Writing 2 0 17 50.374699387 2.12 39.82 Subt-join-addend 0-99 TOTAL 34 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-SY PB-TT B-ST C-TY ST TT 0 0 1 2.933048409 1.00 45.00 Sentence Writing C 1 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15	ITEM NUMBER a					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
C 1 1 14 41.2 C .84 .62 1.07 .78 C 3.79 58.29 Sentence Writing 2 0 17 50.074699367 2.12 39.82 Subt-join-addend 0-99 TOTAL 34 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-SY PB-TT B-ST C-TT ST TT O 0 1 2.933048409 1.00 45.00 Sentence Writing 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15 2.915063816 2.00 44.00	OPTION	WT	N	P		P8-\$T	PBeTT	8•ST	BoTT		ST	ŤŤ	
C 1 1 14 41.2 C .84 .62 1.07 .78 C 3.79 58.29 Sentence Writing 2 0 17 50.074699367 2.12 39.82 Subt-join-addend 0-99 TOTAL 34 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-SY PB-TT B-ST C-TT ST TT O 0 1 2.933048409 1.00 45.00 Sentence Writing 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15 2.915063816 2.00 44.00	0	0	3	8,8		 16	15	28	.27		2.33	55.00	
2 0 17 50.074699387 2.12 39.82 Subt-join-addend 0-99 TOTAL 34 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PS-SY PS-TY B-SY C-TY SY TY 0 0 1 2.933048409 1.00 45.00 Sentence Writing Add-simple joining 11-15 C 1 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15	C 1	1	14		Ç.		• -			C			Sentence Writing
TOTAL 34 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-SY PB-TT B-ST C-TT ST TT O 0 1 2.9 0.33 0.04 0.84 0.09 1.00 45.00 Sentence Writing C 1 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15		0	17							•			Subt-join-addend 0-99
OPTION WT N P PS-SY PS-TY B-ST C-TY ST TT 0 0 1 2.933048409 1.00 45.00 Sentence Writing C 1 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15 2 0 1 2.915063816 2.00 44.00	TCTAL.		34			·	, ,	•	,		-110	-,,	
OPTION WT N P PS-SY PS-TY B-ST C-TY ST TY 0 0 1 2.9 0.33 0.04 0.84 0.09 1.00 45.00 Sentence Writing C 1 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15 2 0 1 2.9 0.15 0.06 0.36 0.16 2.00 44.00	ITEM NUMBER 4					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
0 0 1 2.9 0.33 0.04 0.84 0.09 1.00 45.00 Sentence Writing C) 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15 2 0 1 2.9 0.15 0.06 0.38 0.16 2.00 44.00		•	•				•••				119	, mile	
C 1 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15 2 0 1 2.915063816 2.00 44.00	OPTION	₩T	N	P		PB=SY	P8-TT	B=ST	COTT		ST	TT	
C 1 1 32 94.1 C .35 .07 .62 .13 C 7.91 49.00 Add-simple joining 11-15 2 0 1 2.915063816 2.00 44.00	0	Ò	1	2.9		φ.33	·w.64	84	w.09		1.00	45.00	•
2 0 1 2.915063816 2.00 44.00					C					C			Sentence Writing
					-					•			Add-simple joining 11-15
	TOTAL			•		• - '	,,,	• •			-404	****	•

TEST NO 1 AC	CHIEVEMEN	MONITO	RING BU	*			SUBTES	7 3	ADDITI	ON FACTS		1,74
ITEM NUMBER	1		·	COEPFI	CIENTS	OF CORRE	LATION		ME	ANS	ITEM DESCRIPTIONS	4
OPTIO	v WT	N	Р	PB+ST	PB+T7	B≈ST	8-17	,	67	77		
	0 0	0	0	•00	•00	¢ 0 0	.00	_	,00	.00	1 / E	•
Ċ		34	100.0		•00	.00	,00	Ç ·	9,32	48,76	1 + 5	
	5 0	0	.0	.00	.00	• 00	•00		.00	.00	•	
TOTAL	L	34										1
N	ŗ		^	AACCC	LOTENTS	OF CORRE	LATTON		. ME	ans		
ITEM NUMBER	5			CUEFF	ICTEM 13	of fourt	MELGAL		,			1
01790	N WT	N	P	PB-ST	PB-TT	B#ST	B-TT		ST ST	77		
	n 0	1	2,9	-,02	•,13	×.06	-,33		9,00	39,00		
¢		33	97.1			.04	.26	Ç	9,33	49,06	3 + 2	
	5 0	0	.0	.00	,00	.00	.00		.00	.00	•	;
ATOT.	-	34	••	•	•							
	-			•			•				•	
ITEM NUMBER	3		·	COEFF	ICIENTS	OF CORRE	LATION		ME	ANS		
0PTI0	N HT	N	p	P8+ST	PB+77	B=ST	B=TT		ST	11		•
	•		;o	.00	00	.00	.00	,	,00	.00		
	0 0	0	97.1			,32	=116	Ċ	9,39	48,58	4 + 4	
Ç	5 0 J r	33 1	2.9			41	,21		7.00	55.00	ı	
. TOTA		34			•••	•	•			,		
, (G) A		•										
ITEM NUMBER	4 .			COEFF	ICIENTS	OF CORRI	ELATION		-M8	EANS	•	
		Al		Dn_67	PB≟TT	B#ST	. B+TT		ST	TT	<i>;</i>	•
00110	IN NT	N	Ρ,	- FD#31		J				3		
	0 0	' 4	11.8	56	n,48	,92	78		5,50	32.00		,
c		` 29	85.3			,99	, ,73	Ç	10,00	51.38	3 + 6	
· ·	5 0	ì	2.9	-,30			-,30		5,00	40,00	1	
707		34						•	•			•
						•					•	
ITEM NUMBER	Ę.			COEFF	ICIENTS	OF CORR	ELATION		. M	EANS	•	
		N	P	PB=S1	' P8+TT	B=ST	8-11		ST	11		
0PTI0	TP NC	11	. '	, , ,	*		,			4. -=		
	0 0	4	11.8	-,46	. 0,47	-, 68	•,76		6.50	32,25	4 + 3	266
		29	85.3	C . ??	33		49	C	9,66	50.55	4 T	₩00
.65	à c	1	2.9	,12	19	.30	.49	•	11.00	63.00	•	
TOTA		34							•	f	•	
		•			_							



CENTAL CAD						2 ANULY	MAL TIE	m 3	W Pat	1,00					
TEST NO 1	ACHI	e,vehent	MONITOR	UB DKIF			١,	•		SUBTES	iT 3	ADDITI	ON FACTS		
ITEN NUMBER	6 6		•			COEFF		OF	CORRE	LATION		МЕ	ANS		
OF	PTION	WT	' K'	, p		Pa-ST	9 8 •11		B=ST	8+11		ST	77		
	•	۸,	•							8.0					•
	0 .C 1	0.	C 27	0.		.00			,00 ==			.00	.00		
•		0	33 1	97.3	٧	.30 30			• 77	.47 -:61			49.30 31.00	*	6 + 2
1	TOTAL	•	34	711		~450	-127	`	- 611	401		4640	1100		
ITEM NUMBER	7	•				COEFF	CIENTS	OF	CORRE	LATION		ME	ANS		
OF	PTION	WT	N	P		PB-ST	P8-TT		8-ST	B=TT		ST	7 7		ı
	. 0	. 0	11	32.4			47		-,78	61		7 10	40.00		•
•	c i	1	20				.52			,66			54,50		. 5 + 8
.*.	2	ů.	3	8.8	٠	- 29			-,52				43.33		
1	TOTAL	ı	34			V = :	•••		•	•			****		
					,								1		
ITEM NUMBER	A 9		,			COEFF	CIENTS	OF	CORRE	LATION		зм	ANS		
O.F	TION	WT	N	þ		P8=ST	P8+T1		B=3T	8-17		Sï	77		
	0	9	3	26.5		-,64	~. 51		.,87	-,£8		6.67	37.89		
	Ci	1	25-45 25-45	54.7		.86	-			. ? 9			54,54		6 + 9
	5	0	3 √ .	8,6		46	∞,28		=:81	e,45		5,67	38.33		
7	TOTAL		34								-				
										1					
ITEM NUMBER	} ç					COEFFI	(CIE), 'S	of	CORRE	LATION		- ME	ANS		
. 08	T10N	¥Ť	N	P		PB-ST	1-77		8+\$7	8-17		57	47	•	
	0	0	ŧ	11.8		× , 49	0.32		-,80	-,52		6,00	37.50		*
	C 1	1	800	70.6	¢	.60	, 35		.90	.46	Ç	10,42	51,67		9 + 3
	5	0	Ú	17.6		m ('	×,19		a,59	33		7017	44,67		
1	TOTAL		34			•	V					ŕ			
		*					,							:	
ITEM NUMBER	1.5					C1 7	15 . 175	OF	CORRE			ME	ANS	•	
	T.I'ON	WT	N	þ		PBC.	FUNTT		8-S	8•7 ₹		ST	· T7	4	
÷, t	0	0	12	35.3		67	-,5 4	٠	»,86	 70		T.08	. 39.33		
	3.1	1	20	56,8		.74	,56		, 93	.71	¢	10.05	54.80		5 + 7
•	. 3	Ü	5	5,9		v.18	07		· • ,37	=:18		7,50	45.00	•	- •
Ţ	OTAL		34			•									

TEST NO	1 ACHI	EVEMENT	MONITO	RING 8U				SUBTEST	3	° ADDITI	ON FACTS		
ITEH NU	MBER 11				COEFFI	CIENTS 0	F CORREL	.ATION		МЕ	ANS		
	OPTION	wT	N	P	PB=ST	P8-TT	B=\$T	B=77		ST	11	١	ı
	0	0	10	29.4	-,66	-,66	87	88		6.80	35.50		
	Ci	1	16	47.1 C	.57	.64	.71	.80	C	. 10,81	57,50		8 + 9
	5	0	8	23.5	.04	04	.05	-,05		9.50	47.87		•
	TOTAL		34										,
						•				•	•		
ITEM NU	IMBER 12				COEFF	CIENTS O	F CORREL	LATION		ΜE	ans		1
	OPTION	WT	N	Р	PB=ST	PB=TT	B>S.T	8-11		57	, 11		
	0 .	0	10	29.4	-,71	65	-,9 4	 86		6,60	\$5,80		
	C 1	1	24	70,6 C	.71	,65	. 93	.86	C	10,46	54,17		3 + 8
	į	Ğ	0.	• 0	.00	.00	.00	,00		00	.00		
	TOTAL		34	•	•					7			ł

TEST NO 1 ACHIEVEMENT MONITORING 8U

SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 1					COEFFI	CIENTS	OF C	ORRE	LATION		ME	ANS	ITEM DI	ESCRIPTIONS
OPTION	M Y	N	, p		P8=ST	PB=11	₿	-51	B-77		\$1	· TT		
0	0	0	.0		.00	.00	•	.00	.00	•	.00	<u>•</u> 00	Les .	
. C 1	1	34	100.0	Ç	,00	.00		.00	.00	C	7,88	48.76		5 ~ 1
ž	ŏ	0	,0		.00	.00		.00	.00		.00	.00		
TOTAL	•	34	•			·			• ,			•		,
ITEM NUMBER 2					Ç0EFF1	ICIENTS	OF C	ORRE	LATION	,	Mę	ANS		
OPTION	WŢ	N	P		PB-ST	P8-TT	8	-5,7	ButŢ	:	ST	TT		
, 0	0	2	5,9		-,39	•,38		.78	· » ,77	·	3,50	29.00		
C 1	i	32	94.1	C	.39	.38		.69	.69	Ç	8,16	50.00		9 - 2
5	ò	ō	.0		.00	,00		.00	.00		.00	,00		
TOTAL	•	34	,,		•••	,,,,		•			•			
		•					*						•	
ITEM NUMBER 3	ı				COEFF	CLENTS	OF C	ORRE	LATION		M	EANS		•
OPTION	ŴΤ	N	P		PB+ST	PB-TT	٠ .	3 - ST	Batt		ST	TT		
8	D	5	14.7		-,60	-, 53	,	.92	-,82		3,80	32,20		
0	1	58	82,4	C	,72	.51		04	. 73	C.	8,82	51,79		8" - 7
C 1	9	1	2,9	٠	36	-,02		91	06	٠.,	2.00	47,00	•	•
TATAL	•	34	•••		<u> </u>	. , , ,		•	•					
					`									
ITEM NUMBER 4				•	COEFF	ICIENTS	OF (CORRE	LATION		M	EANS		
OPTION	, WT	N	р		PB=ST	PB-TT	i	B-\$T	BeTT		5°	TT		
n	Q	3	8,8		57	-,32	•	1.01	-,56		2,67	35,67		
CI	1	31	91.2	¢	.57	.32		, 95	.53	C	8,39	50.03	,	5 - 3
5	Ġ.	0	.0		.00	.00		.00	.00		.00	.00		
TOTAL	•	- 34	•			· ·							:	
					•	,			•					
• Tell MINDED					COEFF	ICIENTS	OF (CORRE	LATION		М	EANS		
ITEM NUMBER 5		•			444									•
OPTION	WT	N .	P		P8-\$1	PB=TT	. !	B-ST	BeTT		31	11	,	
		,	2.0		nA	-,23		~ ,76	+.57		3,00	32,00		
. 0	0	1	5.9	^	-,30			1,07	,62	C	8,45	50,26		7 - 6
C 1	1	31	91,2	U	.03 56			1,13	-,57	٠,	1.50	34.00	1	, 0
2	0 .	5	5,9		-120	4,41		• • • •	- 01	•	- , • •	, , , ,	•	
TOTAL	ţ,	34	_			•			,			,	•	

FERTAP	2.0					SUMH	ARY ITE	M STATIS	ICS			•	PA	GE 28
TEST NO) 1 - *ta	TEVEKEI	NT MONITO	RING BU					SVBTE	ST	4 SUBTR	ACTION FACTS	A	ı
ITEM NU	IMBER 6	•				COEFF	ICIENTS	OF CORRE	LATION		M	EANS	,	
*	OPTION	WT	N	P		P8-ST	PB=TT	8-57	₿ℯŢŢ		ST	TT		
	¢	0	8	23.5		-,64	-,36	-,88	- EA			/ A		
	0 1		25	73.5	c	.68			•,50 •53		4,62	40,37		
	á	Ō	1	2.9	•	- 18	*,13		· 33		9,04 5,00	51,84 39,00	8 - 5	
	TOTAL		, 34	,		,,,,	,	, • . •			5,00	47,00		
ITEM NU	IMBER T					80EE2	******	05 4000	11 4 7 2 4 4				•	
						CUEFF	101EM12	OF CORRE	LATION		. М	EANS		
*.	OPTION	₩ Ţ	N	Р		PB=ST	PB-TT	B=ST	8-11		ST,	۲ĭ		
•	0	0	11	32,4		-,61	-,49	-,80	-,64		5,36	39.55	•	
	¢ 1	' 1	51	61.8	¢	.59	.48	. 75	,61		9,19	53,62	14 - 7	
	2	0	5	5,9		.01	01	.02	w.01		8,00	48.50	14 - 7	
	TOTAL		34				•							
ITEM NU	MBER A					COEFF	CIENTS	OF CORRE	'I ATTON		, M	EANS	•	•
								VI VOINE			п	, i	•	
	OPTION	₩Ť	5 N	Р		P8-\$T	PB-TT	8 -5 T	8-11		ST	TT		
÷	0	. 0	10	29,4		-, 75	-,49	-,99	•,65		4,60	38,90		
	C 1	1	19	55.9	C	.65	41	.82	,52	C	9,53	53,47	10 . 5	
_	2	0.	\$:	14,7		.05	,06	.07	,09	·	8,20	50.60	12 - 5	,
•	TOTAL		34					•	•••		-,	- • • • • • • • • • • • • • • • • • • •		
ITEM NU	มอัสก ค		1		,								. 4	
TIEM NO	MBER 9					CGEFF	CIENTS	OF CORRE	LATION		ME	ANS		
	OPTION	ΚŢ	N Z.	۴		PB+ST	P8-TT	B-ST	8477		ST	TT		
	0	0	19	. 55.9		-,64	-,56	-,81	71		6,26	42°,32		
	C 1	1	12	35,3	Ç	,64	,66	,82	,85	C	10,33	60.33	11 - 8	
	5	0	3	8.8		,05	-,13	,09	••23		8,33	43,33		•
	TOTAL		34			·			•					
ITEM NU	MBER 1n					COEFFI	CIENTS	OF CORRE	LATION		WE	ANS		
								•				, MN &	• *	
	OPTION	WT	N	P		P8-57	PO+TT	8\$1	8-11		ST	TT .		
	0	0	18	52,9		-,72	-,46-	·,91	•,57		5,94	43.22		^
949	C 1-	1	14	41.2	C	,71	,51	.90	.65	C	10,29	56,64	13 - 7	0.4
273	2 ,	Ò	2	5,9		.05	-,10	•11	••21		8,50	43,50	•	••
	TOTAL		- 34				,		•					

LERTAP 2.0

			1		
TEST	NO 1	l	ACHIEVEHENT	MONITORING	80

SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER	8 11	;		1	COEFF	ICIENTS	OF CORRE	LATION		ME	ANS	
OF	NOIT	, NT	N	` , p	PB#ST	PB∞TT	8+\$1	B•TT		\$7	ΤΤ	•
	C 1	0 1 0	18 13 3	52,9 38.2 C	70 .63	,59	et e f	*+69 .75	С	6,00 10.15 9,33	42.06 58.38 47.33	12 - 9
ITEM NUMBER	R 12		34		COEFF	ICIENTS	OF CORRE	LATION		M8	4NS	
. 04	PTION	ЖT	'n	p	PB#ST	- 28eTT	B-ST	Bett	•	ST	TT	
	C i	0 1 0	18 8 8	52,9 23,5 C	-,64 ,61	,51	80 .84 .20	52 .70	¢	6,17 11,00 8,52	43.72 60.50 48.37	15 - 8
E.	TOTAL	•	. 34	••••		,,,	• • •	,		•	- •	

Í	LERTAP 2.0						SUMMA	RY ITEH	STATIST	ICS				PAG	E 31
•	TEST NO 1	ACHIE	EVEMENT	MONITOR	RING BJ					SUBTES	iT 5	ADDITI	ON'ALGORI'	THM	· 1 .
	ITEM NUMBER	i					COEFFI	CIENTS (OF CORRE	LATION		ME	ANS	ITEM DESCRIPTIONS	, F&C
	G2T	104	μŢ	N	Р		PB+ST	PB-TT	8-51	Satt		ST	TT	;	
		٥		2	5,9		40	-,45	-,81	-,91		4,00	25,50		
	*	0 0	1	31	91.2	C	150	,48	84	.79	C	13.84	50,68°	. 42	
		2	Ô	1	2.9	٧	28	•.17	u,71	44	•	4,00	36.00	45	
	70	TAL	Ϋ.	34	.,,		-160	-14,		• • •		,,,,,	*****	+ 25	
			. 1									į		-	
	ITEM NUMBER	۶	•				COEFFI	CIENTS (OF CORRE	LATION		ME	ANS		
	OPT	10N ;	WT	Ņ	P		P8=\$T	P8-TT	B-ST	8-11		ST	TT		1
		0	0	1	2,9		-,25	-,17	-,63	-,44		5,00	36,00	14	•
		C 1	1	31	91.2	C	.17	.04	,28	.07	, C	13,26	48,94	•	
		5	0	2	5,9		02	.07	. = . 04	.15		12,50	52,50	+ 84	
	70	TAL		34				,	•					,	
\	ITEM NUMBER	•					COEFF	CIENTS (OF CORRE	LATION		ME	ANS		
							An 60	00 =4		n ++			ŤT		
	00 (100	₩Ţ	N	- р		PB=\$1	PB=TT	8-51	B⊷ŢŢ		51	11	E 2	
		0	0	1	2.9		•,28	-,36	e,71	•,95		4,00	21,00	52	
		21	ì	33	97.1	C	.28	,38	,55	,73	Ç	13,24	49,61	+ 45	•
		5	0	0	.0		.00	,00	.00	.00		.00	.00	. 10	
	10	TAL		34				·							
			:		•										,
	ITEM NUMBER	4					COEFF	CIENTS	OF CORRE	LATION		ME	ANS	,	
	0P1	NOI	WT	N	P		PB-ST	P8-TT	8-57	Butt		ST	ŢŢ		
		ð	0	4	11.8		57	-,53	-,94	87		4,25	30,00	614	. •
		Ci	1	28	82.4	Ċ	.58	,46	.84		C	14.46	51,54	J. AOJ	
		5	0	5	5,9	٠	-,16	-,02	-,31	*,05	•	9,50	47.50	7 384	
	10	TAL	·	34	- •			•••	·			·			
	ITEM NUMBER	5					COEFF	CIENTS (OF CORRE	LATIÓN	ı	Mg	ANS		
		\			_							64	**		
	0P1	IION	WT	N	Р		P8=51	PB=TT	B=\$T	8uTT		ST	11	132	
	A 14 1	0	Q	. 4	11.8		-,57	~,53	94	•,87		.4,25	30,00	•	. Aw.
	27/	01	1	27	79.4 8.8	C	.56	, 46	. 79	.65	C	14.56	51,81	+ <u>551</u>	278
		5	-0	3	8.8		-,15	-,06	-,26	10		10,33	46,33	***************************************	
	71	37.61		74											



TOTAL

NO 1 AC	CHIEVFHEN	* MONITO	FING BU	•		•	SUBTEST	5	ADDITI	ON ALGORITHM		
NUMBER 6	S			. CGEFF1	CIENTS O	F CORRE	LATION		ME	ANS		
101790	TH V	N	P	₽R ÷ ŚT`	PB=TT	B-ST	8-17		ST	TT		ı
o	0	4	11.8	57	53	94	 87	۶.	4,25	30.00	E02	
C 1		27	79.4		.39		.55	C	14.41		503	
ä		3	8.8	07	¢5 `	- 13	.08		11,67		+ 293	
TOTAL		34	, •	•							\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
		•	,,,								• • -	 .
NUMBER -	•			COEFFI	CIENTS 0	FCORRE	LATION		ME	ANS		
CPTION	N WT	N.	р.	PB-ST	P8-TT	B-ST	B-TT		. ST	, TT		•
6	0	1	2.9	-,25	17	-,63	-,44		5.00	36,00	. 56	
C 1		29	85,3	0 ,39	28	58	.41	Ċ		50.24		
, 2		6	11.8	29			- 35	•	8.50	41.25	+ 6	
TOTAL	-	34	••••		•••		•••			•••		
				94555			. A T 1 ON		ME	· A NIC		
NUMBER P	1			COEFF	CIENTS C	is contagn	LATION		me	, ANS		
OPTION	и ыт	N	· Р	PB-ST	P8•TT	ā≈ST	8+TT .		81	* TT	29	
c	0:	. 3	14.7	61	50	94	- .77		4.80	33,20	+ 8	
C		58	82.4	C .64	. 46	,92		C		51.54	' 0	
a	2 , 0	1	2.9	16	.00	-,39	.01	•	8.00	49.00	N.	
TOTAL	-	34										
NUMBER : 4	•			COEFF	CIENTS - C	F CORRE	LATION		, н	ANS		
an T z n.	u wt	N	Р	D0C7	PB-TT	B_ST	B÷TT		ST		6	
OPTION	v *1	P.		FOWAI		5-3 ·	D#11		31			
	, 0	2	5.9	34	-,21	-,68	42		5.50	38.00	/ + <u>85</u>	
· C 1	1	30	88.2		.31	,64	.48	С	13.80	50,20		
Z		2	5,9	22	-,21	-,45	•.42		0.00	38.00		,
TOTAL	•	34	•			•						
NUMBER 14	n			COEFFI	CIENTS C	F CORRE	LATION		Mį	ANS		
			_				·				20	•
OPT10	v WT	N	P	₽8≈51	₽B⇔YT	8=ST	₽÷TT		ST	17	38	•
	, ,	5	14.7	43	 37	-,67	. 57			37.20	+ 45	
C 1	1	25	73.5		•52	,90	,69	С	15,20	52,76		181
	5 0	4	11.8	-,44	-,30	≠• ,72	49		6.35	38,25		سَمُ
TOTAL	•	34						•			••	280.
	,		٠	1							,	
.9'	79 🗇	•			•							F
· L	ı u.			•						•	*•	

1P 2.0

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LERTAP 2.0					SUPPLA	HT LIEM	2141121	103	1			-
TEST NO 1 ACH	IEVEMENT	' MONITOR	RING BU					SUBTEST (s ADDITI	ON ALGORITH	M	, b
ITEM NUMBER 11					COEFFI	CIENTS O	F CORRE	LATION	ME	ANS		
r OPTION	wt '	N	ρ		PB-S7	PB-T1	B≈Sĭ	8-11	\$7	۲۲ .		
. 0	0 .	4	111.8		~• 51	38	. ,83	-,61	5,25	35,50		
·	1	26	76.5	Ċ	160	,51	.82	.70 G		52,42	27	
\$ 1	ð	4	12.8	٧	a,28		æ 45	9.49	8,75	38,25	+ 22 .	
TOTAL	•	34	,,,,,,			•••	•	~			1 1/2	
ITEM NUMBER 12		}			COEFFI	CIENTS C	F CORPE	LATION	H.C	ANS		
OPTION	ЫT	N	P		P8-ST	PB=TT	B=ST	8-77	šĭ	TT	•	
						•	•				00	
٥	0	10 ς	29.4		58	-,48	≈ ; 77	- ,54	8.00	39,10	98	
c i	i	13	30,2	¢	,60	.70	, 77	,9) C	17,23	60.31	+ 72	
5	Ç	11	32.4		a = 06	~.26	- · 06	· . 34	12,45	43,91	Allengina .	
TOTAL		34								•	,	
ITEM NUMBER 13					COEFF	CIENTS (or copae	LATION	ME	:ANS		,
4		1										
OPTION	WT	24	P		PBeST	PBATT	B-51	Bett	57	77	167	
•					4.5	E //	.,86	-,74	6,75	36,25	101	
0		:	23,5	^	-,52 .75	•,54 •55	,99	,72 G	19,40	59,70	+ 426	
C 1	4	10	50.4	U	-,15	•⊃⊃ m, 94	., ; 9	×,05	12,06	48,19	100	
2	0	16 34	47.1		=172	F () T	-13"	~ 1 * 0	• • • • • •	- 1 - 1		
70T4L		34									,	
•											•	1
ITEM NUMBER 14	•				COLFE	CIENTS (of corre	MCITAL	M	EANS		
			•		55 C¥	, 7 4 00	3 - \$T	Batt	ST	TT	ר פ די	•
OPTION	WĪ	٨	þ		PB=51	PB-TT	5491	D411.	e .	' '	3 [6]	•
	۸	. 9	26.5		-,59	- ,5€	,	70	7,56	37.67	+ 213	
, n	3	, ,	25,5	Ċ	,66	.53	90	.71 C	19.11	60.11	Agentiments.	
, 5	0 .	16	47.1	٠	-,07	-01	- 09	01	12,56	48,62		
TOTAL	v	34	7/11		-401	4 0	•	, ,				
TOTAL		, संच						•				
					,						Ç.	
ITEM NUMBER 15			•		COEFF	ICIENTS (OF COFRE	LATION	M	EANS	· _	
					,					9 4	409	1
OPTION	WT	N	P		PB-ST	PB-ïT	8=ST	8-11	ST	11	1 202 -	
							4.7	- 05	7 4 4	35,90	+ 383 -	•
. 0	0	10	59.7		-,63		•,A3	-:85	7,60 20,25	62,12	,	
281	1	- 8	23.5	Ç	.73	S _e t is	1,00	,79 C	12,69	50.12		282
•	0	16	47,1		±303	\.10	~, 06	114	10103			W U W
TOTAL		34				, <u>, , , , , , , , , , , , , , , , , , </u>		11 me ***				

ERIC Full text Provided by ERIC

TEST NO 1 ACH	EVEMENT	MONITO	RING 8U		•••••			SUBTES	T 5	ADDIŢ	ON ALGORI	THM	
ITEM NUMBER 16		•	i		COEFFI	CIENTS C)F CORRE	LATION	`	ME	ANS		, ,
OPTION	ΝŤ	N	P		PB=ST	PB=7T	8=51	Ball		ST	TŢ	,	
0	0	10	29,4		-,66	•,59	•,87	-,79		7.30	36.90		سـ سا
C 1	1	16	47.1		.71	,59	,89		C		56.81		155
2	0	8	23.5		•.12	05	-,17	08	·	11.75	47,50		.792
TOTAL		34			•	•	·	,				٦	, 192
ITEM NUMBER 17	r *		•	. '		CIENTS O	Ne andre	/ ATTAN		. 42	ans		
,					CUEFFI	CAERIA O	ir cunne	PHITON		r.c	CHA;		
OPTION	HT	N	Р		P8=ST	PB=TT	8=5T	B-TT		ST	77		
. 0	0	11	32,4		-,65	-, 59	. 85	-,77		7,73	37,73	•	671
C. 1	1	16	47.1	Ċ	.71	.71	.89	.89	C	17,12	58.50		1 1 1
ż	Ō	7	20.6	•	-,12	19	-,16	28	•	11,71	43,86		+ 176
TOTAL		34			,,,,			***		•••	0,00		
							p.	4					
ITEM NUMBER 19					COEFFI	CIENTS O	F CORRE	LATION	ι	ME	ANS		
OPTION	NT '	N	P		PB-ST	PB+TT	B-ST	Butt		ST	11		2211
0	0	10	29.4		59	-,56	78	•,75		7,90	37,50	•,	334
C' 1	1	18	52,9	`C	169	.62	86		C	16,56	56.28	-	+ 484
ż	ō	6	17.6	•	-,19	-,14	- 28	₩.20	•	10,67	45.00		-
TOTAL		34	• • • • • • • • • • • • • • • • • • • •		4			.,,,,,			.0,00		
ITEM NUMBER 19					. COEFFI	CIENTS O	IF CORRE	LATION		ME	ANS		
OPTION	WT	N	Þ		PB=ST	P8-77	8-ST	B#TT		ST	71		479
0	0	15	35,3		` 60	•,56	+,77	•,73		8,50	38.92	-	
Ci	1	9	26.5	C	.60	48	.81	,65		18,56	59.11	'	4 17
2	0,	13	38.2		.04	.12	05	.15		13,23	50,69		
TOTAL		34				1				•			
		,	,				·			ŗ	,		
ITEM NUMBER 20					COEFFI	CIENTS O	F CORRE	LATION		ME	ANS		200
OPTION	WT	N.	Р		PB#ST	PB-TT	8= 5 T	BeTT		· · •\$1	77	. 6	338 595
0	. 0	15	44.1		58	,52	-,73	·*,66		9,33	ر 0 چيرا 4	· 💠	595
	1	10	29.4	C		.62	1.05		C	19.80	61,20		-
C 1	ß												
¢ 1	0	9	26.5			05	22	•.08		11,44	47,56		

TEST NO 1 40	HIEVEHEN	IT MONITO	RING 8U					SUBTES	T 5	ADDITI	ON ALGORITH	IM.	
ITEM NUMBER 31			, ,		COEFFI	ÇIENTS _.	OF CORRE	LATION		ΜS	;ANS		
OPTICN	WT	K	þ		P8=ST	P8-TT	8 = \$T	Batt		\$1	TT		0/11
0	0	20	58,8		-,66	67	- 84	• .85		9,90	41.55		864
, C 1		4	11.8	C	.56	.53	92	,87	c	21.50	67.50	+	658
, 2		10	29.4	٠	135	.35	42	,46	٠	15.70	55,70	,	070
TOTAL		34	6717		106	129	('-	140		7-110	¢		
, , , ,		34						r		•	•		*
ITEM NUMBER 22						ofener.	OF CORRE	i ATTAN		ue	ANS		
TIEN HOUSEN ES	?	٤			COEFFI	ATEMIS	OF CORNE	PRITON		m E	, MAG		
OPTION	WT	N	Ρ		P8+ST	PB-71	8-\$7	8+11		S T	11		
0	0	25	73.5		-,72	70	- ',97	-,94		10,56	43,58		59
C 1		4	11.8	•	150		.81		c				
5				U		.42		,69	Ļ	20.50	63.75		49
		34	14.7		.45	,48	.70	,75		19.00	63,80	4	
TOTAL	•	34										7	37
_			1.1				•				•		`
ITEM NUMBER 23					COEFFI	CIENTS	OF CORRE	LATION		, ME	ANS		
OPTION	wT.	, N	Þ		P8=\$T	P8=TT	8-51	0+TT		ST	TT		21
,	. 0	26	76,5		••73	66	-1,00	91		10.73	44.04		
. C 1		7	20.6	Ċ	.67	.56	. 95	.80	C	20,29	63.00		33
2		1	2.9	•	55	.31	.56	,79	•	20,00	72,00	٦.	
TOTAL		34	*17			101	,	,,,		24100		+	59
		4.4									•		-
ITEM NUMBER 24					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		
*		•			•			••	•				86
OPTION	HT	N	Р		PB-ST	P8-11	B#\$T	8-11		ST	77		00
			,										27
o	. 0	27	79.4		• • 67	-,62	-,94	• , 88		11.07	44.67		
C 1	1	2	5,9	C	.27	.55	° ,55	.44	Ċ	19.00	60.00	' 	98
. 2	0	5	14.7		•59	5 ,57	,90	,87		20.80	66,40	•	10
TOTAL		34											

TEST	NO	1	. ACHIEVEHENT	MONITORING	Ail
	. 1 47		· POLITE APPLIED	month or the	ōυ

SUBTEST	6	SUBTRACTION ALGORITHM

	•	,											
ITEM NUMBE	R ^s 1					COEFF	CIENTS	OF CORRE	LATION		ME	ANS	ITEM DESCRIPTIONS
0	PTION	747	N	P		P8-ST	P8+TT	B⊌ST	B=TT		ŜŢ	TT	
	0	0	1	2,9		37	w,13	-,94	33		.00	39,00	
	¢ 1	1	. 29	85.3	C	75	.51	1.12		Ċ	. 5,59	51.48	87
	5	0	Ł	11.8		•,62	- 49	-1.02	- 80	. •	1,00	31.50	V 1
*	TOTAL		34	·			•	•••			*144	41100	-51
	3	. ,					ð						
			•	,									
ITEM NUMBE	R Ş					COEFF	CIENTS	OF CORRE	LATION		ME	ANS '	e e
0	PTION	WT	N	p		PB#ST	PB=TT	B-57	Batt		ST	TT	
	٥ د	0 ′	4	11.8		-142	-,42	-,69	a 40		3 30	21 04	79
	C 1	1	56	76,5	Ĉ	.57	57.		68 78	•	-2,25	34.00	1] .
	S	ō	4	11.8	٠	-,45	-,33		-,54	V	5,73	52,85	- 43
1	TOTAL		34	••••		-,40	-113	19410	- 4 3 4		5.00	37.00	Thomas
			-						, ,			2	•
	_												
ITEM NUMBE	y 3	, ^{ce}				COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	
0	PTION	WT	N	P		PB=ST	P8-TT	8+61	8=TT		\$1	11	00
	G	0	4	11.8		46	-,35	•. 76	•.57		2 86	1/ 54	48
· ·	0 1	1	25	73,5		.76	.=,35	1,02		Ċ	2.00	36,50	- 25
	ż	0.	5	14.7	٧	×153	•,42	-,81	.80	Ų	5,92	53,36	40
	TOTAL	• •	34	4717		m (33	**,76	#401	65		5.00	35,60	
	_		•						1				
ITEH NUMBE	R 4			* "		COEFF/1	CIENTS	OF CORRE	LATION		34	ANS .	
O	PTION	WT	N	p		D2_2T	PB=TT	B=ST	D ++			• •	
1		,,,		r		PO#31	POWIE	D#3+	8-77		ST	**	. '
ø	Ö	0-	4	11.8		70	-,51	-1,15	■.A1		50	30.75	915
•	C 1	1	85	82,4	C	,76	60	1,10	,86	e	5,68	52,32	
	ż	0	5	5,9	•	a 26	-,27	-,53	-,54	٧	2,50	35.00	- 411
1	TOTAL	·	36	-,-		7	16,	-,00	-104		-100	23100	The Laboratory of the Lot of the
	•	•	-				. •						
_									•			• , •	
ITEM NUMBER	R 5					COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	,
26	PT:ON	HT	N	P		P8=ST	PB=TT	8.ST	B-TT		S†	11	202
	A	۸		19 (<i>.</i> -				· 293
	0	0,	6	17.6		J.69	•,60	-1.01	~,89	_	1,50	35.00	- 140
	Cl	1	26	76,5	Ç	.76	, 37	1,05	.78	C	5,85	52,85	1 ()
	2 #/:#A)	0	5	5,9		-,26	u , 05	•,53	• 11		2.50	46.00	
	TOTAL		34									٠.	/

LERTAP	5.0		•			341						AL 60	THM		
TEST NO	o i achi	EVEHENT	MONITOR	ING BU			1	•	SUBTEST	6	SUBTRAC	TION ALGO	44 I DM		
•			•	,		*******	CIENTS OF	/ F CORREL	ATION		MEA	NS .		,	. •
ITEM N	UMBER 6		** :					B=\$T	B-TT		ST	11		•	14
	OPTION	НΤ	, N	. р		P8-ST	PB=TT					10.57		1	
	.· / 0	° 0	7	20.6		-,68	- ,64	-,96 .85	•.91 ,65	C	1.86, 5.91	32,57 53,22		898	· ·
. 1	¢i	- 1	23	. 67.6 11.8	C	.66 10	,50 ,08	-,17	.13		4,25	51,50		- 443	
	Z TOŤAL	•	34	****									•		
•	,							,	\ 		MEA	NS			
ITEH: N	IUMBER 7	1		£	*2	COEFFI	CIENTS C	, CORRE	LATION			1			
	OPTION	- WT	N	P		PB=ST	PB=TT	3 -\$ T	B+TT		ST	ΤŢ			
		, ,	4	17,6		-,15	-,11	4.21	15		4,17	45,83		53	
	0 C 1	0	6 2	5.9	C	.45	.41	18	.63 -,18	C	9,00 4,73	70.00 47.81		- 9	•
	5	0	2á	76,5	1	-,12	4,13 (16	4,10		1	•		-	
	TOTAL		34-			•	•								
1 m 4 m , ()	uubeed 1	•		1		COEFFI	CIENTS (F CORRE	LATION	, ,	ME	ANS		à	
ITEM 1	NUMBER A	1	N	· p	,		PB=TT		' B•TT	•	ST	TT		. 04	
	OPTION	ŴΤ	N			1	.=.18	•,38°	•, 25	•	3,75	44.62		34	•
•	٥	0	8 - 2	23,5 5,9	С	•.28 •,45	.41	,91	,83		9,00	70.00 48.37		6	
	2 ا 2 ا	Q	24	70.6		, ò 2	-, 05	.03	•,06 -		4,92	40101	•		
	TOTAL	4	34		•	• • •	. 4	6							
•					•	COEFF	CIENTS	OF CORRE	LATION		'ME	ANS	•	:	•
N3FI O	NUMBER 9	, •						B=ST	B≖TT		ST	TT		. 67	
	NOTITE	WT.	N	P		PB=ST		• ,			4,00	_43.50		_ Q	il.
	0	0	10	29.4		-, 25 , 45		-,33 ,91		.c	9,00	70.00 -	•	0	
	, C (1	. 55 5	5.9 64.7		.02		.02			4,91	49,23		•	l»,,
	T074L	v	34				· v				• •	1			
·	•	,					o . ICIENTS	OF CORR	FLATION		H	EANS		•	
ITEM	NUMBER 16				·	,			1		ST	T۲	į.	•	****
ş	OPTION	WT	N	P	,	. P8+ST	PB=TT	8-\$ T	B=TT	•				70	
	. ,		5	14,7		••50		+,30		C	3,80 9,00	44.20 72.00	. *	- 39	290
289	C 1	1,1	2 27	`5,9 		. 45 09				1	4,70	47.89	•	t teamenth	
• •	S Jatot		34	8,				•		,					٠
		•					:	ι	•		٠	1	ŕ	s '	

LERYAP 2.0				į;	SUMM	ARY ITEM	STATIST	ICS -		_	•	٠	Р,
TEST NO 1 ACH	NAKEVAI	T MONITO	RING 8U				•	SUBTES	ST 6	SUBTR	ACTION ALG	ORITHM,	
ITEM NUMBER 11		,			COEFF	CIENTS	OF CORRE	LATION	•	M	ANS	*	•
OPTION	WT	, N	, . р		P8 - ST	PB+TT	8-ST	B=TT		ST	TT	1	•
	0	; 7	120.6		64	·							
C 1	1	1	2.9		• ,36	•	-,51				39,71	:	53
ָּבָּ יַבְּי ַ	Ç	26	76.5		.24 .25, e	22	.60 .34	-	C		72,00		
TOTAL		34	. • • •	•	- 75.0	-166	197	.30		311A	, .50,31	_	34
	•		' .					,		9	•		termine (
ITEM NUMBER 12		•		,	AAEEE	ATCHE	AF 6600r	1 47160				•	
	•	,	•		ÇÇEFF	.G15013.	OF CORRE	CALION		M	ANS		
OPTION	,NT	J ^N	A		PBHST	PB-TT	8-57	8-77	.•	ST	TT :		,
0	0	- 6	26.5		-,29	-,23	*.39	-,31		3.78	43,89		83
C 1	1	0	.0		.00	-	.00	.00	•	•00	,00		27
5	٥,	25	73,5		129	, 23	.39	.30	•	5,28	50,52	_	41
TOTAL		34						,		,		٠.	
	ŀ								, , ,			•	
ITEM NUMBER 13			•		COEFFI	CIENTS	OF CORRE	LATION	4	ME	ANS		
OPTION	WT	N	P		PB=ST:	PB+TT	B=ST	BeTT	•	ST	TT,		
					;				•				,
0	0	14	41.2		- , 25	55	-,31	-,27		4,21.	45, 43		ا با
· C 1	1.	0	.0	Ç	•00	.00		,00		.00	•00		864.
, 2 Total	. 0	20	58,8		.25	.52	,31	.27	•	_/ 5,35	51.10	-	225
		34,		,				4.	•		•		223
a (+	•					•						`
ITEM NUMBER 14					COEFFI		OF CORRE	LATION ,	1	ME	ANS		
OPTION	WT	. 11	P		∲8 • \$T	oP8-TT	B S. T	BeTT.		ST	TT	, i	
, 0	. 0	17	50.0		-,28	-,35	36	7,43		4.24	44.29		774
C 1	1	0	.0	C		.00	,00	,00	C	.00	.00	,	[]T
. 2	0	17	50.0		8\$,	35	36	.43	•	5,53	53,24	· Manager	529
TOTAL		34				5				•		•	ACTION AND ADDRESS OF THE PARTY
		•				<i>b</i> ,							
ITEM NUMBER 15	•				COFFFT	ATENTS (OF CORRE	ATTON		uc	ANS	;	
					7.1	, A121113 ;	or Dunner	PHITOIT		МĽ	CNA		
OPTION	WT -	• N.	۰, ا	,	PB-ST	P8=T1"	8-57	B-TT		ST	TT	•	
0	0	16	47.1		•,26	•.25	•,33	-, 36		4,25	44.81	,	952
, C 1	1	0	0	C	.00	.00	,00		C		•00	10 -	843
2 .		18	52,9		. 26	53	,33,	.36	-	5,44	52,28		<u> </u>
TOTAL	9	91^{34}								•	- - -		•
P .	H	ΛT						_					

	FEHIX	F CAN		ı		3,		. •			•				
	TEST	NO 1, ACH	ZEVEHEN	T MONITO	RING ĐU			\ • '	SUBTES	6 1	SUƏTRA	CTION AUG	ORITHM	,	•
	ITEM	NUMBER 16			• 5	- coe	FFICIENTS	OF CORRI	ELATION	•	* ME	ANS		•	
		OPTION	wT	N ,	P	РВ•	 ST\	B-ST	Butt		. st	11			•
		٥	0	17	50.0		.2326	-,29	-,32		4,35	45,47	:	7 10	_
_		0	, ,	2	,0		00 .00		4 ,00	Ĉ	.00	.00		614	·
	, ,	. 0 1	۸ .	0 17	50.0		23 ,26		, 32		5.41		1 -	- 20U.	
	,	- 70*41	Ų	. 34	30.0	او ا	to lea	, , ,	. ,		• • • • • • • • • • • • • • • • • • • •		·	707	
	•	TOTAL		14		` · •							, 4	~ / '	٠,
•		- .					4		 .		1		, ,	•	
	ITEM	NUMBER 17		•	•	CO	FFICIENTS	OF CORR	ELATION	•	· ME	ANS		· · ,	
	V -4	OPTION	WT	N	. р	PA	-ST P8-TT	8=57	\ B=TT		5T .	· 11	•	,	•
	•	UPILUN	77 1		·	75				•			•	מאמ"	· · ·
		. 0		55 -	64,7	-	.34 -,37	43	-,48		4,32	45,23	•	429	
			1	0	' ',0		00 00			C	.00	, 00		_ 50/	
		C 1	0	15	35,3		34 ,37		. 48		5,92	55,25		- 536	
		4074	V	,34	2212	1	134 (5)	•			•	·		. \	, /
		,TOTAL	,	, 34			*1							•	
	ı				•	,					3.	_	•	•	
/	ITEM	NUMBER 18				CO	EFFICIENTS	OF CORR	ELATION		M	ANS.			•
		OPTION	WT	N	P	PB	·\$1_P6-11	B=ST	8-11		ST	ĬĬ		639	'
	•	•										40 06			<i>[</i> *.]
		- 0,	0	51	61.8		.15 -,29	•			4,62	45,86	, (- 243	1 -
		, 1 0 1	1	0	• 0	•	.00				.00	.00 .	•		
	,	. 8	٥,	13	38.2		25, 15,	, 19	.37		15,0	53,46	•		
		ROTAL	No.	, 34	,	,	•								
		,								ţ				٩	0
	+TEU	NUMBER 19				ĊO.	EFFICIENTS	OF CORR	ELATION	1	. MI	EANS'	•	4.15	
	, Tren	Hailpey 13	٠	ď	••		. 8			•					•
		OPTION	WY	. N	\ P	PB	-ST P8-T	8-57	' B=TY	o	ST	TT	•	Ond	1
	ı		1		<i>-</i> , -		10 . 10	-,15	*,24		4,68	46.95	•	824	
	ı	. 0	0	55	64,7		1215				.00	.00		- /20	
		C 1	1	. 0	.0		.00				5,25		•	- 679	
		5	0	. 12	35.3	' k	15, 11,	9 ,15	184		2152	1			:
		TOTAL		34					٠	. •	,	•			
		ì	•	•			١.,			•				Δ .	
	ITFM	NUMBER 2.		•		co	EFFICIENT:	S OF CORF	RELATION		M	EANS	•		
	4.0	114			\		•	_	•				•		**
	:	OPTION	· WT,	N	P	. Pa	-ST P8-T	r B-51	B=TT		ST	TT		942	
-		,	,	34	76,5		.183	125	5 ₩, 46		4,65	46,38	, ,	- 595	
		0	V	26	7			0. 00	• • • • • • • • • • • • • • • • • • •		.00	.00		<u>ب ا</u> ب	
		C 1		0) () 22 E			_			5,63	56,50	• ;	, -	. 40
5	293	5	Q	8	23,5		.16 .3	. (6.			- 1,	4/	•		. 29
٨	,00	TOTAL		34			1					1		6	
		•													

ERIC Full Text Provided by ERIC

TEST	МQ	1	ACHIEVEHENT	MONITOR 1940	80

SUBTEST & 'SUBTRACTION ALGORITHM

· · · · · · · · · · · · · · · · · · ·	<i>i</i> .		
ITEM NUMBER 21	x.	COEFFICIENTS OF CORRELATION	MEANS
OPTION WT	N P	PB=ST PB=TT B=S' B=TT	ST TT
. 0 0	26 76,5	183325 /+.46	4.65 46.38 328
C 1 1	· 0 , .0 C	.00° .00 .00 .00 C	auu auu
, 2 0 TATOT	8 23,5 ·	.18 .33 .25 .46	5.63 56,50 - 169
IA LHC	34		
TTEM NUMBER 22	•	COEFFICIENTS OF CORRELATION	MEANS
OPTION KT	N P	PB-ST PB-TT B-ST B-TT	ST TT
• •		, ,	• • • • • • • • • • • • • • • • • • • •
<i>,</i>	25 73,5	*,15 *,25 *,20 *,34	4.68 46.80 710
C 1 1 2 0	0 1,0 C 9 26,5	.00 ,00' .00 .00 C	
TOTAL '	34	112 //S2 \$50 124	- 469
1 9186	54		Management 1
	į.	, , , , , , , , , , , , , , , , , , ,	MEANS .
ITÉM NUMBER 23		COEFFICIENTS OF CORRELATION	•
OPTION WT	N P	*PB-ST PB-TT B-ST B-TT	्डा गा
0 0	29 85,3	=.17 =.25)=.25 =.38	4,72 47,41 803
Ci l	0 0 0	.00 .00 .00 C	.00 .00
,	5 14.7	.17 ,25 ,26 ,39	5,80 56,60 - 427
' TOTAL	34	,	7 1
•			
ITEM NUMBER 24	•	COEFFICIENTS OF CORRELATION	MEANS
. OPTION WT	N P	PB-ST PB-TT B-ST, B-TT	ST TT
Δ Λ	28 82,4	.01 •.1201 •.18	4,89 48,04
0 C1 1	0 10 0	,00 ,00 ,00 400 C	.00 .00 - 212
C 1 1 2 0	6 17.6	01 ,1201 ,18	4,63 52,17
TOTAL	34		

PAGE. 16

TEST NO 1 ACH	IEVEMENT	MONITOR	ING 8V	, ,	•		SUBTES	T 1	OBJECT	IVES. TEST	• 1
ITEM NUMBER 1	. •	· · · · · · · · · · · · · · · · · · ·		COEFF	ICIENTS O	F CORRE	LATION	*1	ME	ANS	ITEM DESCRIPTIONS
NOITAO	μŢ	, N`.	P	P8-ST	PB-TT	B≐ST	B=TT		ST	ŢŤ	
C 1 2 3 4 Total	100	\\\ 26 0 1 31	83.9 12.9 .0 3.2	28	•.39 •00	35 .45 .00	.40 61 .00	C	9,62 7,50 .00 10.00	49.65 33.25 .00 61.00	Numerousness Writes 0-99
,,,			,	, , ,					•	•	
ITEM NUMBER 2		1	•	COEFF	ICIENTS O	F CORRE	LATION		, Me	ANS	
OPTION	. WT ,	N	P '		PB-TT	B=ST	Bett		ST .	, TT	1
C 2 3 4 TOTAL	' '0 1 0	1 26 1 3	3.2 83.9 3.2 9.7	03 C .41 24 35	.46	-,06 .60 -,59 -,60	.16 .68 91		9.00 9.81 6.00 6.67	53.00 50.85 18.00 30.67	Numerousness Represents 0-99
10146		31		1 1				,	•	6	
ITEM NUMBER : 3	· ,			COEFF	ICIENTS O	F CORRE	LATION	•	, a ME	ANS	
OPTICN	· WT	1 N	P	P8-9T	PB=TT	8=ST	8-11	1	ST	ĬĬ,	
C 1 2 3 4 TOTAL	0 0	24 3 2 2 31	77.4 9.7 6.5 6.5	°C ,65 -,22° -,35 -,50	.05 14	.90 38 68 98	.64 .09 =1.05 =.63	C	10,25 7,67 6,00 4,50	51.58 50.33 18.00 30.00	Problem Solving (A) Comparison 11-15
ITEM NUMBER	•			COEFF	ICIENTS O					· A NIC	
OPTION	μT	N .	P	NPB-ST			. B=TT	•	ST	ANS	
1 2 3 4 TOTAL	0 0 1	0 3 25 3	9.7 80.6 9.7	.00 43 C .65 43	.00 -,49 .58 -,28	.00 75 .92 75	.00 85 .82	C	.00 6.00 10.16 6.00	26,00 52,04 35,33	Problem Solving (A) Add-part part whole 0-99

	• • •	a		, c	COLI:	COLEMAN C	ir iddikke	LATIUN		1EAND -		
	OPTION	NT	√'n.	p	PB-ST	PB-TT.	B≖ŠT	8-11) ST	TT		
	C 3	0 1	24	6.5 6.5 77.4 C 9.7	50 19 .59	50 16 .47 12	16,-	98 31 .65 C	4.50 7.50 10,17 7.33	51,62	Problem Solving (B) Subt-part part whole-add	dend
**************************************	nen .~b				٠.	4		<i>i</i>	•			:
TIEN NUM	BER Jab	•	3	•		CIENTS O		, ,		IEANS .		
2	OPTION	WT	· N	P .	PB#ST :	P8=TT	B=ST	Bett	ST .	TT		
	C 1 2 . 3 . 4 . TOTAL	· 0 0 0	22 · 4 4 4 3i	71.0 C 3.2 12.9 12.9	.23 =.24 =.13 =.05	00 37 .11 .09	.30 59 21	01 C 91 .17	6,00	47.86 18.00 52.00 51.50	Problem Solving (B) Subt-join-addend 0-99	,
, t		 Ž	.)	•			¢	• • •				•••
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	1				. •		•	•		A STATE OF THE STA	*	. ·
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•	1		4			٠.	•	. •	•		1	
الرحلام بائها مدده	1	c c.•	••••• <u>•</u> 5	·, ·				·	. :	ا برید بیشد به چه ۱ به به	Park 1	
4	;	,		1	. /	, y				•		
. /		ı	•		·	· :		,		••		
LERTAP 2	• 0	;	ı	\ \ \	SUMMA	IRY ITEM	STATIST	ICS	a .	.*	PAGE 1	'. 17
TEST NO	1 ACHI	EVEMENT	MONITORI	NG BV	s		•	SUBTEST	1 OBJEC	TIVES TEST		''. ,
ITEM NUME	ere ≓d	``	,	*	~, · ,			, i		•		
TIEM NUM						CIENTS O				EANS	,	."
. •	OPTION	WT ,	N	P	.	P8-T7	B=ST	Batt		e. 11	•	٠,
	, C 2 3 TOTAL	0 1 0	3 23 3 2	9;7 74.2 C 9.7 6.5	-,39	:23	,58 -,67 -,27,	15 31 .C /43 01	8,33 10,00 6,33 8,00	49,91	Order, Place Value Ordering 0-99	,
			,	•		,	- 1			,	•	• •
ITEM NUME	BER #8,				COEFFI	CIENTS O	F CORRE	LATION	М	EANS		
	OPTION	WT.	, N	, P	PB-ST'	PB-TT	B+ST	. B=TT -	ST	111 +		
299 <u>JC</u>	7 C 1 2 :	0 ,	8 6 8 9	35.8 C 19.4 25.8 29.0	20 11	.00 .03 12	.32 28 15	.01; C_ .04 17 12	10.37 8,33 8,87 9,56	48.00 48.67 44.87 50.00	Order, Place Value Place Value 0-99	3

OPTION	WT N	P PE	B=ST; PB-TT	B-ST B-TT	. ST.	` 11	7
1 C 2 3 YOTAL	0 1 1 30 0 0 0 0		2432 .24 .32 .00 .00	5979 .47 .63 .00 .00	6.00 C 9.47 .00	22.00 48.77 .00	Sentence Writing (A) Subt-simple separating 11-15
•				A ANDER'S TION	e e	TANG	192
ITEM NUMBER ALC	• ,			F CORRELATION		ANS	· \
OPTION	WT N	P. P	8-ST P8-1T	B-ST B-TT	ST	11	
1 2 C 3 4	0 19 0 0 1 12 0 0	61.3 .0 38.7 C	.6253 .00 .00 .62 .53	7967 .00 .00 .79 .67 .00 \.00	₹.00 C. 11.33	41.79 .00 57.58 .00	Scntence Writing (A) Subt-comparison 0-99
				٠.	,	A	
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$t^{(j)}$.					6)
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		٠,			•	•	PAGE 18
LERTAP 2.0		•	SUMMARY ITEM	, t ,			,
TEST NO 1 ACHIE	EVEHENT MONITOR	RING BY		SUBTE	ST 1 OBJEC	TIVES TEST	\$
ITEM NUMBER AL			OEFFICIENTS	of correlation		EANS	•
OPTION	WT · N		8*ST P8*TT	B-ST B-TT	ST	TT	<u>.</u>
, · · · · · · · · · · · · · · · · · · ·	0 12	38.7		-, 51 -, 54	8,08	40.08	
. 2 C 3	0 1		1709 .61 .56	4221 .77 '.71		41.00 55.35	Sentence Writing (B) Subt-part part whole addend
4	0 1	3.2	-,40 -,32	-1,12 -,79		22.00	11-15
TOTAL		*					$\mathcal{L}_{\mathcal{A}}^{\mathcal{A}}$
ITEM NUMBER 'MIZ			OEFFICIENTS	OF CORRELATION	, M	EANS	
201 OPTION	WT N	P P	P8-ST P8-TT	B-ST B-TT	ST	TT	302
301	0 1		1709	*,42 *.21		41.00 50.00	1
C 2	1 28 0 1		.52 .44	,85 ,72 -,59 -,79 -1,12 -,79		55.00 55.00	Sentence Writing (B) Add-simple joining 0-99
Provided by ERIC TOTAL	0 1	3.5	m,46 =,32	-444W 7417			•

1 31

TOTAL

LERTAP 2.0					SUMMA	RY ITEM	STATIST	ICS		•			PAGE	19
TEST NO 1 ACH	IEVEMENI	MONITOR	RING BV					SUBTES.	T 1	OBJECT	IVES TEST		∉ id∙r	•
(. ITEH NUMBER 13	•				cofffi	CIENTS (OF CORRE	LATTON		MF.	ANS		•.	
1				•	OULI 1 2	9161111	or	But a dit		176	7116	:	•	
OPTION	HT	, N	P	•	PB~ST	P8+11	8-ST	B-TT		ST	TT	•	<u>:</u>	
c 1	1	24	77.4	C	,65	.60	.90	.03	C	10,25	52,67	,		
2	0	3	9.7		-,35	36	,60	-,63		6,67	31,67	11 - dad 61		
3	0	" 1	3,2		-,03	05	-,06	12		9,00	44.00	Algorithms		•
4	0	5	6.5	•	50	32	98	-,63		4,50	30.00	Addition Alg	orienm	
OTHER *	0	1 ′	3.2		-,24	 32	-,59	79		6.00	22,00	• .	•	
TOTAL		31				•						•		
		•	•			٠.,							•	
ITEM NUMBER 14	·				COEFFI	CIENTS	OF CORRE	LATION		ME	ANS			
Ø ÓPTION	WT	N' .	. P		PB-ST	B=TT	B=ST	B=TŢ	. •	ST	TÏ `			
· 1	0	52	71.0		.12	.08	.16	.10		9.55	48.64	and the second	•	
2	0	2	6.5		09	-,03	-,17	-,05		8,50	46,50	Algorithms		
, C 3	1	1	3.2	C	.26	.14	64	.34	Ç	13,00	59.00	Subtraction	Algorithm	,
4	0	6	19.4		20	14	-,28	20		8,33	43,83	, /		
TOTAL	J	31												

TEST NO 1 ACH	IEVEMENI	T MONITO	NING BV				•	SUBTES	T- 2	SENTEN	CE WRITIN	G FREE RESPONSE
ITEM NUMBER' 1	,				COEFFI	CIENTS	OF CORRI	ELATION		, ME	ANS	ITEM DESCRIPTIONS
OPTION	WŤ.	, N	, р		PB=ST	P8-TT	B=ST	B=TT		ST	. 11	
C.1 2 Total	0 1 0	0 31 .0 31	100.0	C ·	.00	.00	.00 .00 .00	.00 .00 .00	c .,	3.10 .00	47.90 .00	Sentence Writing - Add-part part whole 11-15
,	•	•						C: 4776;;		ue.	ANG	
ITEM NUMBER >		,		**	COEFFI	CIENTS	OF CORR	FPUTON		mr	ANS	i i
OPTION	· WT	, · N	P		PB=ST	PB-TT	B-ST	BeTT		ST	TT	
c / 0	0 1 0	0 28 3	.0 90.3 9.7	C	.00 .55 55	.00 .10	.00 .89 94		C	.00 3.25 1.67	,00 48,39 43,33	Sentence Writing Subt-simple separating 0-99
TOTAL		31										•
ITEM NUMBER . 3		•	•		COEFF	CIENTS	or corr	ELATION	•	ME	ANS	
OPTION	NT	N	P		PB-ST	P8-T1	B-ST	B≠TT		5 T	TT	· •
C:	0 1 8	0 20 11 31	.0 64.5 35.5		.00 .71 71	.00 .63 63	.00 .92 92	.81.	C	3.55 ' 2.27	.00 54.75 35.45	Sentence Writing Subt-part part shole-addend 0-99
N				. h						• ur	AND "	· ·
ITEM NUMBER 4					COEFF	ICIENTS	OF CORR	FLATION	4	m	ANS "	
OPTION	ыT	N	p	;	P8-ST	PB-TT	8-57	8=11		ST	TT	u ·
C 1 201AL	0 1 0	0 17 14 31	.0 54.8 45.2		.00 .71 71	.00 .07 07	, 89	:09		.00 3,65 2,43	.00 48.88 46.71	Sentence Writing Subt-join-addend 11-15
,	į.	••				r^{-N}					*	* 1

TEST NO 1 ACHI	EVEHENT	HONITÓ	ING BY		;	. '		SUBTES	T 3	ADDITI	ON FACTS	•
ITEM NUMBER 4	• • • • • • • • • • • • • • • • • • •				COEFF	ICIENTS	OF CORRE	LATION		ME	ANS	ITEM DESCRIPTIONS
OPTION	WT \	N.	P		P8=\$T	'P8+TT	B=\$T	B+TT		ST	. 11	ţ
0	0 /	1	3,2		-,52	-,37	-1,27	-,91	•	,00	18.00	•
C 1	1	28	90.3	C	•52	, 45	, 85	.73	C ·	9,68	50.04	3 + 1
Z TOTAL	0	31	6.5		26	•,27	-,50	52	ė	6.00	33,00	
,	<i>*</i> :		•	•				\		•		
ITEM NUMBER >					COEFF	ICIENTS	OF CORRE	LATION	`. `	ME	ANS	كربر
OPTION	HT	N	Pç	•	PB-ST	P8-11	B≈ST	8-11		ST	TT	
Ó	٥.	1	3,2		-,52	-,37	-1,27	· 91	1	00,	18.00	
` ' C 1	1	30	96,8	Ç,				.72	C	9,43	48,90	2 + 5
2	0 ;	0	0		•00	•00	.00	, • 00		.00	.00	
TOTAL	(.31 \					ŧ				9	
ITEH NUMBER 3	. \	Ca year			COEFF	ICIENTS	QF CORRE	LATION	1	. M	ANS	••
OPTION	WT	; N	P .		PB=ST	PB-TT	B=ST	8-11	5	ST	TT	•
0	0	i 1	3,2		52	-,37	-1,27	*,91		•00	18.00	* ************************************
Ci	-10°	30	96,8	C	,52.	. 37	1,00	.72	C	9,43	48,90	1+6
\$	0 /	0 31	,0		- •00	•00	•00	• • 00		00	•00	
TOTAL	-!	31			•					ì	ŕ	
ITEM NUMBER 4	. ;				COEFF	IPLENTS	OF CORRE	LATION		HE	ANS ,	
OPTION	WT I	. N	Р		PB=ST	`P8+TT	e-st	B=TT	٠.	S.T	, TT	• <u>*</u>
0	٠ ۵	0	0		£00	,00	.00	.00		.00	. '00	
C 1	ì	, 29	93,5	Ç	,58			.88	Ç	9,62	49,83	7 + 2
&	0	\$	6,5		2 m. 58	-,50		-,98		2.00	20.00	
' TOTAL		31				·	1		:		4,	
,						`		•		•		
ITEM NUMBER E			•		COEFF	ICIENTS	OF CORRE	LATION		M	ANS	
OPTION	WT .	·N	P	· ,	PB-ST	PB-TT	B-ST	BeTT		ST	TT .	
. 0	0 .	3	9,7		49	-,31	-,84	5 4		4,33	34,00	•
, C 1	1	.26	83,9	C	,62	,39	. 91	.57	C	10.00	50,38	2 + 6
2074	0 .	2.	6,5		-,34	,20	-,66	-,40		5,00	36,50	000
TOTAL		31 .		•		$\mathcal{E}_{\mathcal{E}}^{*}$,					308
, Λ	(1.54 (1.54)											

LERTAP 2.	0				2 activiti	KI TIMI	, DINIE	•••			4				
TEST NO	1 ACHT	EVEHENT	ROTINOM 1	ING BV	<i>^'</i>		•	SUBTES	T 3	ADDITI	ON FACTS			• •	
ITEM NUMB	', ER 6		n.	`, t	COEFFI	CIENTS	OF CORRE	LATION	,	ME	ANS	,			
. 1	OPTION	WT	N	, Pararr	PB-ST	PB=TT	B=ST	BeTT	÷	ST	77	•	•	vi	
	·	. 0	الله الله	19.4	m, 81	-,69	-1,16	-,99		3,85	27,33	•	8		
	C 1	1	€ 25	80.6 C			1,15			10.40	52,84		+ 5	4	
•	2	Ò	0	.0	.00	.00	00	. 0.0		.00	.00 -	. :			
	TOTAL		31	•				. 4			•				
•	• '	١	•	•	•	1									
e Ten alliko			•		COFFFI	CTENTS	OF CORRE	LATION	١ .	ME	ANS	. :			
ITEM NUMB	EK T.				00211	, or civile								•	
	OPTION	WT.	N	P	P8-ST	PB-TT	8 - 5T	8-11	٠.	Spr	TŢ	44		•	
<i>'</i> .	/						4.6	- 40		6,67	37,56			•	
	0	0	9	29.0.		-,45		=,60 01				4	+ 8		a
	0 1	1	50	64,5° C	.76 58		1.13	-1.05	•	2.00	18,00			,	7
	3	U ·	2 31	6.5	1	;		- 1145	٠.,			* .			
,	TOTAL		31	•		١				•			٥	•	
•			t	•					•		••••	i		•	
TEN NUME	ER P		.1	•	COEFF	ICIENTS	OF CORRE	LATION		' ME	AND				•.
•			, N	, p	72-100	DR*\T	B-ST	Bett		SJ	TT				
	OPTION	· WT	N	•		POPII		,					•	``	
	0	٥	9.	a.0	. ,78	-,67	1,03	88		5,22	32,67				٠.
,	Ci	ì	50	64,5 C	,76	. 65	,98	.83	C		54,90	· 3	+ 7		
•	Ş	0	2 -			-,03		05		8.50	46,50				
, .	TOTAL	L	- 31					, ,					ι		
•		F								•					
ITEH NUME	16B A				COEFF	ICIENTS	OF CORRE	CATION		M)	EANS	•	•		`
TIEM WALL	3EA Y			ı	1	1	,						. •		
. ,	OPTION	WT	N	P	PB=Sĩ	,PB+TT	8=\$1	BeTT	•	ST	TT				
	•	_	,	10 /	- 70	50	-1.01	-,84		4,50	30,50		u		
	0	0	. 6	19.4	-,70 -,82	-,58 . 64		.,87			53.43	. 5	+ 9		
	C . 1	1	5 53	74.2 C 6.5	. ,34			0,40	-	5.00	36,50				
	2. Tõtal	U	31	V(3	Á	- 1	•	-		· .					
	10176			_	·				,	,)				. •	1
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ITEMUNUM	BER 14	•	. 🦻		COEFF	ICIENTS	OF CORR	LATION		.''	LAITE				
	OPTION	- WT	N	Ď	1.	PB=TT				ST	ΤŤ				
•	ALITON	4 1		•					•					•	
00	, o	0	15	48,4			-,85		_	6,87	39,40		5 + 8	_	
309	C 1	' 1	15	4B,4 C	-		. 88	- 13		· 11,47	56,67 44,00	`	•	- , 31	
.	. 5	Q	1	. 3'5	-,06	4. 05	-,16	-,12		8.00	74100			,	
	TOTAL		31	,							•			''	

ERIC

SUMMARY	ITEM	STAT	ISTICS	
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TEST NO 1	ACHIEVEMENT	MONITORING BY
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SUBTEST 3 ADDITION FACTS

1601			1	404		•								5	•
ITEM	NUMBER 1	.1		•			COEFFI	CIENTS	OF CORRE	LATION	,	ME	ANS	٠.	
	. OPTIO		WT	N	P.,		P8-\$\(\frac{1}{3}\)	PB=TT	B=\$T	B=TT		ST	TT		
\$ "" "	, C	5	0 1 0	10 19 2 31	32.3 61.3 6.5		.,62 .79 01	***60 ***64 ***612	-1.07 1.01 02	78 .81 24	C	5.30 11.16 9.00	35.20 55.32 41.00		8 + 7
ITEŅ	NUMBER 1		•	•			COEFFI	CIENTS	OF CORRE	LATION		. ME	ANS		>
•	OPTIO	On	¥T	·N	P		PB=ST	PB-TT	B=\$1	B+TT		ST	T T		
	. °°¢	5	0 1 0	11 18 2 31	35.5 58.1 6.5	C	•.57 •74 •.36	48 .67 40	*•76 *94 *•74	.84	· C	6.64 11.17 4.50	38.45 s 56.17 25.50	,	4+9

ERIC Founded by ERIC

TEST- NO 1	ACHIE	VEMENT	HONITOR	Ing:/8V		,	•		•	SUBTEŚ	T 4	SUBTRAC	TION FACT	S
TITEH KUMBER	i.	,	7	•	•	COEFFI	CIENTS	0F	CORRÊL	ATION		MEA	INS	ITEM DESCRIPTIONS
. OPT	ION	₩Ť	N	, b		PB=ST	PB-11		8 - 5T	8-11		ST	**	
•	0 C 1 2	0	0 30 1 31	96.8 96.8 3.2	;	.00 .38 38	37		.73	,72	C	.00 7.83 1.00	48.90	7 - 1
				•			,					MĚ	, 1MC	
ITEM NUMBER	ે ટ						CIENTS		,					
OPT	ION	ų7	·N	, P		Pa-ST	P8=TT	1	B=\$T	· B=TT	1	ST	TT_	x = 0
4	0 0 2 TAL	0 1 0	1 29 1 A 31	93.5	3	, 42	=,37 -37 -,14		•74	, 65	C	1.00 7.97 4.00	18.00 49.31 37.00	8 - 4
ITEN NUMBER	•					coèffi	ICIENTS	OF	CORREL	ATION		ME.	ANS	
	ION	WT	N	′ Р			. '		•			. , ST	, TT ,	•
	C 1 2 DTAL	°0 1 0	28	6,5 90.3 3,2	Ć	•58	.42		90 94 79	.68	C	8.21 8.21 2.00	35.00 49.89 18.00	9 – 5
						COFFF	ICIENT'S	OF	CORRE	LATION		ME	ANS	•
ITEM NUMBER				,P			PB+TT					,	ΤŤ	
Ų	TION 0 •C 1 2	0 1 0	N 20 5 31	1944	Ç	-,45 ,71	49 60	,	•,65 ,92 •,66	71 .77 37	C	4.67 9.30 4.40	33.17 54.40 39.60	7 - 4
ITEM NUMBER	ς	,			٠	COEFF	ICIENTS	OF	CORRE	LATION	•	ME	ANS	
-	Tion	WT	N '	P	`	P8=ST	P8=TT	ı	a-st	8+77		SŢ	¥1	
313	O C 1 2	0 1 0	10 18 3	32.3 58.1 9.7	C	61 .74 27	,52		.79 .93 .,46		C	4,80 9,61 5,00	38.10 54,33 42,00	8 - 6

TEST	NO 1 ACHI	EVEHEN	T Honito	RING BV		,			SUBTES	T 4	SUBTRA	CTION FAC	TS
	NUMBER 6			· .))	COEFFI	CIENTS	OF CORR	ELATION		ME	ANS	. ¥
	nonga o					*	,						•
	OPTION '	. MI	N	P	. 1	PB-51	PB-TT	8-ST	BeTT		5 1	TT -	
	0	1 0	3	9.7	•	-,37	-,16	m.64	~,28		4.00	40,67	,
	C 1	1	25	80.6	C	.71	,43			¢	8,72	51.00	4 - 3
	2	.0	3	9.7	•	- 58	-,42	99	√ .62 72		2,00	29,33	4 - 3
	POTAL		31			•••	,	Ť	•	1	-		
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	,											sauć.	
ITEM	NUMBER 7	*		•	(COEFFI	CIENTS	OF CORR	ELATION		M	ANS:	
	OPŢION	ΝT	N	Ρ	. !	P8=ST	P8-TT	B=ST	8-77		\$T	TT)
	0	0	6	19.4		-,48	-,17	-,69	+.24		4.50	42,83	•
	6 1	1	21	67,7	C	,61	,36	.79		C	8,95		\ _, ,
	. 2	. 0	4	12,9	•	-,29	•,33	- 45		-1	5,25	35,25	11 - 2
	TOTAL	•	31			•••			* 3	V			}
		•		•			•						
ITEH	NUMBER 9					cgEFF:	CLENTS	OF CORF	ELATION	•	, M(EANS	,
	OPTION	WT	. N	, р	•	PB=ST	P8-77	8 - ST	B⇒TT	•	~5T	TT	*
	0	0	16	51.6		->5 4	-,36	-,6f	≈,45		5,94	42.81	
	ÇÎ	1	11	35.5	C	.70	,45	,90		C	10,64	56,73	13 - 8
	2	. 0	4	12.9		19	-,10	-,31			6,00	44,00	13 0
	TOTAL ,		31										
													•
ITEM	NUMBER 9		•			COEFF	ICIENTS	OF CORF	ELATION		M	EANS	•
	OPTION	WT	N	^ p ·		PB=ST,	PB#TT	B=S1	B-77		ST	ر 11.	
	0	0	17	54.8		a,46	-,41	•,57	-,51		6,29	42,53	
,	Ci	1		38.7	C	.64	. 54	, 81	, 69	C	10,17		12 - 7
	ž	Ō	5 15	6,5		·,34	-,26	- ,68	-,50		3.50	33,50	
	TOTAL		31									,	
	•					•	,		•			•	
ITEH	NUMBER 15					COEFF	ICIENTS	OF CORF	RELATION		M	EANS	• .
	OPTION	WT	N	P		PB-ST	PB-TT	B=5'	B⊭TT		ST	TT	
		٨	12	38,7		-,65	-,46	-,8	-,59		5,00	39,42	
	0 C 1	0	12	38.7	C	.78		, 9			10.75	58,17	15 - 9
	5	ð	, 7	22,6	•	u, 15					6.71	44.86	
•	TOTAL	•	J 31			,	*	•	,				9
0	31	. ·	<i>J</i>	ĥ							~ .		0
XIC.	2.1	J .		į.		•					1		•
ovided by ERIC				J.F									

TEST NO 1	ACHIE	VEMENT	MONITOR	ING 8V	•			,	SUBTES	T 4	SUBTRAC	TION FACTS	
ITEM NUMBER	R 11		٠	١,		COEFFI	CIENTS 0	CORRE	_AT'ION		MEA	INS	
41. 01	PTION	WΤ	N	P		PB#ST	PB=TT	B-ST	B=TT		ST	TT	-
	0 C 1 2 TOTAL .	0 1 0	6 20 5 31	19.4 64.5 16.1	Ç	-, 55 , 71 -, 33	•.43 .66 40	•,80 ,92 -,50	61 .85 60	C	4.00 9.30 5.20	35,17 55,05 34,60	10 - 2
TEM NUMBE	R 12					COEFFI	CLENTS, O	F CORRE	LATION		ME	\ \	
0	PTION	мT	' N	, р	•	PB•ST	PR-TT	B-ST	8-11		. ST	TT	
	C 1 7 Z TOTAL	0 1 0 ··	15 10 6 31	48.4 32.3 19.4	c	41 .45 02	-,28 .43 -,16	-,51 -,02	+.35 .57 +.24	C	6,27) 9,70 7,50	43.73 57.10 43.00	16 - 7

TEST NO 1 ACCITEMENT MONITORING BY ITEM NUMBER 1 OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT BOST ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. ST. TT. OPTION WT N P PROST PROTT ST. ST. ST. ST. ST. ST. ST. ST. ST. S	, .	LERTAP 2.0				SUMMA	RY ITEN	STATIST	ICS				PA
OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 ITEM NUMBER 2 COEFFICIENTS OF CORRELATION OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 ITEM NUMBER 3 COEFFICIENTS OF CORRELATION OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OFFICIAL 31 OPTION WIT N P PB-ST PB-TT B-ST B-TT ST TT OPTION WIT N P PB-ST	,		CHIEVEMENT	HONZTOR	ING 8V			٠.	1	5 A	DDITI	ON ALGORIT	НМ
10	•	ITEM NUMBER'	ì			COEFFI	CIENTS	OF CORRE	LATION		√ ME	ANS	ITEM DESCRIPTIONS
176H NUMBER 2 0 0 0 0 0 0 0 0 0	, /	OPTIO	N WT	. N	ρ	P8=\$T	PB=TT		8=11		ST ·	77	•
TOTAL 31 ITEM NUMBER 2 COEFFICIENTS OF CORRELATION MEANS OPTION WI N P P8-ST P8-TT ST IT O		• • • •	0 0	29	93,5	35	. ,29	-,69 ,62	,5 0.	C 14	.17.	49.00	53 - 34
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT OPTION WT N P PB-ST PB-TT B-TT ST TT OPTION WT N P PB-ST PB-TT B-TT ST TT OPTION WT N P PB-ST PB-TT B-TT ST TT OPTION WT N P PB-ST PB-TT B-TT ST TT OPTION WT N P PB-ST PB-TT B-TT ST TT OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT OPTION	i i		-			•		•	4				
1	, a ,	ITEM NUMBER	5			COEFFI	CIENTS	OF CORRE	LATION	, ,	ME	ANS	, ,
C1 1 30 96.8 C .14 .02 .27 .05 C 13.77 47.97. + 21 TOTAL 31 TOTAL 31 COEFFICIENTS OF CORRELATION MEANS OPTION MT N P PB-ST PB-TT B-ST B-TT ST TT 27 C1 1 29 93.5 C .02 .18 .03 .32 C 133.59 47.21 + 62 TOTAL 31 THEM NUMBER 4 COEFFICIENTS OF CORRELATION HEANS OPTION MT N P PB-ST PB-TT B-ST B-TT ST TT 50 TOTAL 31 THEM NUMBER 4 COEFFICIENTS OF CORRELATION HEANS OPTION MT N P PB-ST PB-TT B-ST B-TT ST TT 50 TOTAL 31 TOTAL 31 TOTAL 31 THEM NUMBER 4 COEFFICIENTS OF CORRELATION HEANS OPTION MT N P PB-ST PB-TT B-ST B-TT ST TT 50 TOTAL 31 TOTAL 31	,	OPTIO	N. WT	N	P	PB-ST	P8-TT	B#ST.	8-11		ST,	11	20
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 27 TOTAL 31 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION HEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 27 TOTAL 31 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION HEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 50 TOTAL 31 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION HEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 50 TOTAL 31 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION HEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 293 TOTAL 31 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION HEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 293 TOTAL 31 ITEM NUMBER 4 COEFFICIENTS OF CORRELATION HEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 265 O 0 2 6.546509596 2.50 20.00 + 314 319 TOTAL 31 TOTAL 31	• • •	C	1 1 2	30 °	96.8	C 614	02	, 27	•05		.77	47,97.	+ 21
OPTION HT N P PB-ST PB-TT B-ST B-TT ST TT 27 TT 26 TT 27 TT 26 TT 27 TT 26 TT 27 TT	·	· .				AAFFE		ne cobre	u atton		, Me	ANS	 · .
1 3,2 -14 -102 -34 -106 9,00 46,00 +62		ITEH NUMBER	3		٤	,	,	·					
C 1 29 93.5 ° C 02 18 03 32 C 13.59 47.21 C 2 0 1 3.2 16 .28 .40 .68 19.00 70.00	n'	OPT10	TW N	N	Ž, P	PB=ST	P8-TT			V.			27
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 293 OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 293 C1 1 27 87.1 C .41 .32 .63 .49 C 14.56 49.70 + 293 TOTAL 31 COEFFICIENTS OF CORRELATION / MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 265 OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 265 C1 1 23 80.6 C .35 .38 .50 .54 C 14.64 50.60 C1 1 25 80.6 C .35 .38 .50 .54 C 14.64 50.60 C1 1 25 80.6 C .35 .38 .50 .54 C 14.64 50.60 C1 1 25 80.6 C .35 .38 .50 .54 C 14.64 50.60 C1 1 25 80.6 C .35 .38 .50 .54 C 14.64 50.60 C1 1 27 80.60 .35 .38 .50 .54 C 14.64 50.60			5 0 1 1	1	93.5	C = 02	-,18	-,03	-,32	C '13	5,59	47-21	+ 62
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT O 0 1 3.235378691 2.00 18.00	-	TOTA	il. A	3)				. >	•				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		ITEM NUMBER	4 .			COEFF	ICIENTS	OF CORRE	LATION		ME	EANS	
C1 1 27 87.1 C .41 .32 .63 .49 C 14.56 49.70 + 293 TOTAL 31 TOTAL 31 COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 265 O 0 2 6.548509598 2.50 20.00 + 314 C1 1 23 80.6 C .35 .38 .50 .54 C 14.64 50.60 C1 1 23 80.6 C .35 .38 .50 .54 C 14.64 50.60 TOTAL 31	•	OPTIO	N WT	N	P	PB=ST	P8-11	B=ST	B=TT		ST	7†	E00
TOTAL 31 ITEM NUMBER COEFFICIENTS OF CORRELATION MEANS OPTION WT N P PB-ST PB-TT B-ST 8-TT ST TT 265 O 0 2 6.548509598 2.50 20.00 + 314 C 1 1 25 80.6 C .35 .38 .50 .54 C 14.64 50.60 C 1 2 0 4 12.906080912 12.75 45.00	,		1 1	27	87.1	C ,41	. ,32	,63	.49	C 14	• ,56	. 49.70	+ 293
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 265 O 0 2 6.548509598 2.50 20.00 + 314 C 1 1 25 80.6 C .35 .38 .50 .54 C 14.64 50.60 3 1 9 TOTAL 31		TOTA		31	Ų		•		•	•	,		o,
OPTION WT N P PB-ST PB-TT B-ST B-TT ST TT 265 O 0 2 6.548509598 2.50 20.00 + 314 C 1 1 25 80.6 C .35 .38 .50 .54 C 14.64 50.60 319 TOTAL 31		TTEN NUMBER	K			COEFF	ICIENTS	OF CORRE	ELATION	/	. M	EANS	
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ERIC	·	c	0 0 1 1 2 0	2 25 4	80.6	°C ,35	,38	•50	•54	C 1	2,50 4,64	50,60	+ 314
·	ERI Full Text Provided	C	7.10	₹ 6		•			7				

TEST NO 1 ACHIEVERENT MONITORING 84

SUBTEST 5 ADDITION ALGORITHM

1631 "				ųς,				,					
ITEM N	:UMBER 6	•			, b(EFFIC	TENTS 0	r correl	ATION	,	ME	ans,	
\$1 5 11 11	OPTION	WT	N N	P	P	3 - 57,	PB-TT	B-ST	B-TT .	,	ST	11	
	ง	0	. 3	9.7.	. 6	.,49	-,43	× 👬 84	-,74		4,67	28,67	. 000
,	C 1	1		83.9 (.38	,38	,56	, \$6	C	14,62	50.35	332
	5 1	0	24.	6.5		.02.	-, 05	.03	-10		14.00	45.00	+ 2116
,	TOTAL		31			, ,		• •			,		1 270
	•			,	Ĺ		ŭ	٠,٠				4116	^
ITEM !	NUMBER 7		٠.,			0EFFI(CIENTS (of Correl	NOTTA		ME	ANS	
•	OPTION	, WT	. N	p	þ	B=\$T	PB=TT	B=ST	8-11		ST	TT	-
						E 2	~. 58	,83	-,92		5,50	26.00	1
	0	.0	4	12.9		••52 •73	.68	1,01	,94	C.	16.00	53;25	'J. 5/2
	· c 1	1	24	, , ,	C	• • • • • • • • • • • • • • • • • • •	m,30		- 52	· .	5,33	34.33	7 00
	5	Ò	3	9,7	•	-143	- 9 .7V	.,.		`			
	TOTAL	•	31				. •				•	*	,
							, 4854 36 :	Of Corre	- LATION		ME	žna;	,
ITEM	NUMBER #				Ç	QEFF 1	CSENIS	UP CONNE	FWITAII		•		
Ą	OPTION	WT	N.	p	P	8=51	PB=TT	B=ST	B-TT	1	ST	, 11	68
			_			. 7	39	•,8 1	-,67	•	5,00	30.67	. 60
	h	0	3	9,7		.70	60	94		C	16,09	53.04	T 8
	¢ 1	1	53	74.2		= 145	. 40	e,68	-,60	•	7,40	34,60	-
,	, ,2	0	5 .	16,1	. ,		1		, , ,	-			1
,	TOTAL		31 ,									4	•
٠						·		A. AADDE	ATTAN		MI	ANS	f .
ITEH	NUMBER 9	•		·	(OEFFI	CIENTS	OF CORRE	CHITOIL			b . •	
<i>!</i>	OPTION	WT	N	P	. F	B-ST	PB=TT	8-51	Batt		ST	.11	19
	•			12.0		-,61	-,74	98	-1.17		, 4,00	20.00	+ 7
	0	0	4	12.9 74.2	•	.55	.52	,14	.70	C	15,57	52,39	,
	C- 1	1	53	12.9		10	.06	-,16	.09		12,00	50,00	
•	S LATOT	0	4 31	1507		-110	. ,,,,		•	•			•
	IOIAL .	,	• • • • • • • • • • • • • • • • • • • •				١						
						COEFFI	CIENTS	OF CORRE	LATION		M	EANS	•
ITEM	NUMBER 10			1								77	20
	OPTION	WT	N	þ	l	PB+ST	PBoTT	9-\$1	8-77		ST	, 11	29
		٨	. 5	16.1		-,69	-,76	-1.03	-1,14		4,20	\$5.60	+ 64.
	0	0	24	77.4	С	.73	,69	1.01	, 95	Ç	16.00	53,33	-
321	C 1	0	5	6.5	-	+.22	-,03	-,43	-,07		8,50	46.00	
נאנ	TOTAL		31	- •									

LERTAP 2.0		•		
TEST NO 1 AC	HIÈVEHENT	MONITOR	RING ÖV	
ITEM NUMBER 11				
OPTION	NT	N	5 P	
, 0	, 0 .	- 4	12.9	
+ C1	1	22 5	71.0 16.1	C
TOTAL	•	'31		
TEH NUMBER 12	,		s	
OPTION	·WT	N .	, (P	
	0	. 9	29.0	

SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 11				COEFF	ICIENTS	OF CORRE	LATION	ĤΕ	ANS	
487 PAL		kı .			AA 44	n c7		.		•
OPTION	WT	N	, P '	P8-ST	PB#TT	B-ST	Batt	ST	II .	
. 0	, 0	4	12.9	-,61	-,74	.,98	-1.17	4,00	20,00	•
'+ C 1	1	55	. 71.0 C	,53	.60	. 69	,79 C	15,64	53.50	45
5	0	5	16.1	o,09	07	. 6,13	-,10	12,40	45,60	
TOTAL	•	'31		•	,					+ 28
		.,		``			•	•	L	-
TTEM NUMBER 12			G	COEFF	ICIENTS	OF CORRE	LATION	, ME	ANS	5'
OPTION	WT	N	, p	PB-ST	PB=TT	B=\$T	78• ₹₹	\$7	11	
<u>ر</u> د	Ď	´ • 9	29.0	-,43	-,51	•.52	68	9,56	36,22	,
* C1	, i	8	25,8 C		-		,64 C		59,62	17
, 5	0	14	45,2	-,12		-,16		12,79	48.71	+ 95
TOTAL		31								1 10
•		•					۵			
ITEM NUMBER 13				. COEFF	ICIENTS	OF GORRE	LATION	ME	ANS T	1
OPTION	WT	s 1.1 N	P .	P8=\$T	P8-77	B-ST	,B=TT	ST.	11	
	٨		10.4	_ #A	48	*,77	-,58	7,00	35,83	+ 426
, *	0	· 15	19.4 . 38.7 C				.70 C		58.00	
2	٥	, 13	41,9	27			-,28	11,69	44,15	+ 458
TOTAL	•	31	٠,,,	,	/	-,0,	, ,,,,			,
			,							,
ITEM NUMBER 14		•		COEFF	ICIENTS	OF CORRE	LATION	, ME	ANS .	**************************************
OPTION	141	N	P	PB=ST	PB+TT	8-\$1	BoTT	, s r	ĬĬ	239
- 0	-0	9	29.0	-,69	-,60	-, 92	*,79	7,11	34,22	+ 653
C 1	1	14	45.2 0				,73 C	19.00	57,21	. 000
2	Ç	8	× 25,8	•,21	04	•,28	*, 05	11.50	47,00	
TOTAL		31	•		1					•
, a					`\					
ITEM NUMBER 15	\sim	, .		COEFF	ICTENTS	OF CORRE	LATION	ME	ANS	
TACH MOUNTY TO	1			V			•	•		
° OPTION	WT	N	P	P8=ST	PB-TT	8-67	8-77	. \$1	TT	115
0	Ĉ,	₿	25,8	-,61	•,55	83	×.74	7,37	34,38	+ 875
Ci	1	15	48,4 C			1,05		18,80	86.87	************
ž,	ō	: 8	25,8	-,34		• 46		10,12	44,62	_
TOTAL		31 -	•	•		i				

TEST NO 1 ACHI	(EVEXE)	סדנאסא דא	RING BY		•	**	1 '	SUBTES	T 5	ADDITI	ON ALGORI	THM	204
ITEM NUMBER 16			ş .*		COEFFI	CIENTS	OF CORRE	LATION	·	HE	ANS		, 4
OPTION	wT	N	· p		P8-ST	PB+TT	∯-ST	8-77		ST	TT		· / \
	Û	В	25,8		-,61	• ,55	-, 83	•,74		, 7,37	34,38		,
0, C 1	1	16	51.6	C	,84	,56	1,05	.70	C	18,50	55,81	171	_
. 2	Ö	• 7	55.6	•	-,36	-,10	-\50	•.13		9.57	45.29	1 [7	•
TOTAL	·	31	,			, /	•					+ 642	,
,						4.	,						:
							AR ARDOR	,		. i	4416	,	,
ITEM NUMBER, 17			*				OF CORRE	PHITON		<u>ጥ</u> ዚ	ANS	· ·	
OPTION	¥T	* + N	΄ρ'	(PB-ST	PB+TT	B=ST	8-77		ST	TT		•
c	n	8	25.8		-,61	-,55	-,83	-,74		7,37	34,38	50	٦
C 1	1	15	48.4	C'		,61	1.05	.76	C	18,80	57.07	583	j
5 ,	ō	8	25.8		34	-,15	-,46	-,20		10,12	44,25	+ 24	1
TOTAL		31	•		•								_ ′
,	•				1	. ?i					1		٤
ITEM NUMBER 18	4	•			COEFF	ICIENTS	OF CORRE	LATION		" ME	ANS "	J	
OPTLON	WT	³ N	p		PR-ST	PB=TT	8-57	8-11		ST	11 '	•	
· VETLVII	, 41				19-01	,	1				.,	10/	
. 0	0	⁴ 8	25.8		-,70	-,68	-,94	-,92		6,50	31,12	186) '
01.	1	17	54.8	Ç.	. ,80	, \$0	1,01		C.	18:00	57.24	+570)
2	Q	. 6'	19,4	,	24	*,14	-, 35	50		10.67	43,83		•••
TOTAŬ		31					•						
											•		
ITEM NUMBER 19					COEFF	ICIENTS	OF CORRE	LATION		ME	ANS		• •
OPTION	Wī	~ N	. Р		PB+ST	PB-YT	ė+ST	B#TT	,	ST	77	010	1
•	,	_	45.5			,,	54	- 49		0 30	36,37	263 + 459	
0	0	8	25,8		-,42		-,56	+₀63 78		9,38 20.50	60,60	+ 459	
C 1	ì	10	32,3	Ü	4,38	. ,60 	1,03	· - · 50		10,92	45.23		•
TOTAL	U	13 31	41.9		4130		2144	, -1EA		1411			*
IVIAL		; 31				•		,		ě			
ITEM NUMBER 20		,			COEFF	ICIENTS	OF, CORRE	LATION		, ME	ANS	•	
OPTION	WТ	N	Р		P8+ST	. P8+TT	. Bast	8+11		ST	TT	359	.0
				•			•				9	_	•
0	0	12	38.7			55	49	- 70		10,67	37,83	+ 265	326
325	1	9	29.0	Ç	76		1.01			20,78	62,44		UAU
•	0	. 10	32.3		-,33	-,05	-,43	· * •06		10.70	46,90	1	
TOTAL	,	31						a		, .			

TEST NO 1 ACHI	EVEMENT	HONITOR	ING BV	1 v			SUBTEST	5	ADDITI	ON ALGORIT	кМ .	•
TEN NUMBER 21	′ (•	COEFFI	CIENTS (OF CORREL	.ATION		ME	ANS		i
· , OPTION	WT	N	p :	P8=ST	P8=TT	B=ST	8•11		\$T	- 11	3 ;	7/7
0 C 1 2 TOTAL	0	13 4 14 '31	41.9 12.9 C 45.2	33 ,49 -,01	47 .36 .22	41 .78 01	•.59 .58 .28	C	11.31 21.25 13.57	39,85 61,75 51,43	+	434
			"			<u>،</u>		υ .		ANG		
ITEM NUMBER 28				COEFF	CIENTS	of Correi			ME	ANS		
OPTION	HT	N	P	PB-ST	PBeTT	B⇒ST			\$7	* **		
C 1 2 Total	G . 1 0	18 — 7 6 31	56.1 22.6 C 19.4	-,4() :45 •02	52 .55 .06	≠,51 ,64 -,03	65 .77 .09	C	11.56 18.71 13.93	41,50 62.86 49.67	+	19 64 58
			. '			AT 4400E			° ÷ ME	ZNA		
ITEM NUMBER 23	•			Ç0ŁFř.	ICIENTS	OF CORRE	Puston		mg.	, Alda		
OPTION	WT	N_	, P	RB=ST	PBeTT	8-\$1	Batt		ST	· • • • • • • • • • • • • • • • • • • •		67
O O O O O O O O O O O O O O O O O O O	0 . 1 0	18 7 6 31	58 ₄ 1. 22.6 C	40 .38 .10	•.52 .43 .19	.53 .14	•.65 ,59 ,28		11.56 17.86 14.83	41,50 59,43 53,67	+	25 22
ITEM NUMBER 24	**		j	COEFF	ICIENTS	OF CORRE	LATION		. ME	ANS	d .	, , , , , , , , , , , , , , , , , , ,
OPTION	WT	N	. р		PB-TT	B≈ST	BeTT		ST	TT }		58
0 C 1 2 Total	0 1 0	21 6 4	67.7 19.4 12.9	•,56	.47	-,73 ,77 ,24	.68 .68	C	11.29 20.17 16.00	41.67 62.00 59.50	+	98 85

L	i.	ĸ	ŗ	Ah	,	۷	9	V

LERTAP 2	2.0				3 4 (11 17	41,1	•			;	•	1	
TEST NO	1 ACHI	EVEMENT	HONITOR	ing ,bv				SUBTES	r 6	SUBTRA	CTION ALG	PRITHM ,	≠ ½
•				Ĺ							. L. C	PROPRINTIONS	¥206
ITEH NU	MBER 1				COEFF	ICIENTS	OF CORRE	LATION		ME	ANS	ITEM DESCRIPTIONS	
	OPTION	wT	N	P	P8=ST	PB=17	8-ST	8=17		ST	TT		
	£ 0	0	1	3,2	•,36		-,89	-,79		.00	22.00	67	
	.C 1	1	26	83,9 C	,77		1.13	.89 78	C	5,96 ,75	51.77 29.25	11.2	
	5	. 0	4	12,9	*,6 5	-,49	-1.04	4110	•	• • •	0,,00	42	
	TOTAL		31		•		ŗ						
	•						AB AADDE	LATTON		Me	ANS	ζ.	1
ITEM NU	MBER 2	h			COEFF	ICIENIS	OF CORRE	PHI TAIL				•	
	OPTION	WT	N	P	PB=ST	PB=TT	B=ST	B=7T	•	\$1	TT		•
			, •			**	-, 89	•.79	•	.00	22.00	56	
	Ū	0	1	3.2	-,36 56.		.79	.79	C	5,80	51.88	- 25	1
١	Cl	1	25 - 5	80.6 C			- 64	66		2,60	33,20	~ <u>~</u>	A.
	TOTAL	V.	31	8	- • • •		.)						
	10174		•		·*			,		•			
ITEM NU	IMBER 3			J	COEFF	ICIENTS	OF CORRE	LATION		. ME	ANS		
ITEM NU	נ אפמייו	1				V	o			ST	77		
	OPTION	WT/	- N	Р	P8=ST	, PB=TT	B=ST	B=TT		. 31	• • • • • • • • • • • • • • • • • • • •	88	
		۸,	5	6,5	,42	-,50	-,82	-,98	,	1.00	20.00	71	•
	C 1.	0 1	26		70		1.03	.75	C	5,88	51,15	16	
;	5	0	3	9.7	++52	21	-,90	-,37		1,00	38,33		
	TOTAL		31								•		
*,	v									44	- A 11 C		
ITEM NU	JMBER 4				COEF	ICIENTS	OF CORRE	LATION		·, M	EANS		,
	OPTION	ИΤ	N	p	P8-51	r PB-TT	8-57	B-11	•	ST	77		
	OPIION	, "'						_ 02		1,60	, 27.40	698	
	٥. 🇸	, 0	\$5	16.1	,61		₩,90	93 1.02		6,55	55.09	- 457	
	Ĉ 1	1	52	71.0	8. D		1,16 -,86	58	(\	1,50	34.00	<u> </u>	
	. / 2 Total	0	31	12.9	-,5	-,-,					•		
.	IGIAL		,			· ·			ı				
	Listonen e				COEF	RICIENTS	OF CORR	ELATION		M	EANS		
I LEM W	UMBER 4									ST	TT		•
	OPTION	WT	N	Ρ	PB=5	T PB=TT	B⇒ST	Q-11		• •		482	330
	.~ .	. n	6	19,4 -	- ,6	974		-1.07		1.50	25,83	- 231	UUU
000	0 C 1	·	50	64,5	C .7	6 ,63	,98	.61	C	6,55	54,70		
329	. / 5	Ō	5	16.1	-15	602	-,38	•,03		3,60	47,20		
	TOTAL	•	, 31			A	•	•			,		· (+
												•	

TEST NO 1 ACHIEVEMENT MONITORING BY

SUBTEST 6 SUBTRACTION ALGORITHM

					•						
ITEM NUMBER 6				COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	•
OPTION	WT	N	Р	P8=ST	. PB-TT	B-ST	B≖Tï		ST	ŢŢ	
0	0	. 6	19.4	. ,69.	-,74	-,99	=1,.07		1.50	25,83	
·C 1	1	22	71.0			1.13	.89	C	6,50	54.18	485
2	Ö	3	9,7	-,39	• 04	-,68	07		2,00	46.00	, , , ,
TOTAL	٧.	31	, ,			•	. •			į.	~ 265
ININE		31		• .							Section 2019
ITEM NUMBER 7			,	COEFF	ICIENTS	OF CORRE	LATION	•	ME	ANS	
OPTION	WT	N '	P	PB=ST	PB-TT	B#5T	B•TT		ST	ŢŢ	
0	0	5	16,1	. +,49	- 159	-,74	-,88		2.20	28,40	30.
- C 1			\$5.4~ (29	.72	. 40.	Ĉ	7,57	55,71	J.
	1 0	7 19	61,3	, , , , , , , , , , , , , , , , , , , ,		₹,09	.25	•	4,95	50,16	32 5
2	U		67 4 3	1 #441	. 412		160		*110		Manager
TOTAL		31									
ITEM NUMBER A		ø		COEFF	ICIENTS	OF CORRE	LATION		· ME	ANS	
OPTION	WT	N	P	* PB-ST	P8-TT	B-ST	B=TT	• `	ST	II	71}
•	۸	· 5	16,1	-,49	 59	74	88		2,20	28,40	74
0 C 1	X	5	16.1 "(85	.86	C	8,40	67,00	– 8
5	0	21	67.7	0B		07	.01	-	5,00	48,00	
TOTAL	V	31	0111	-100	101	- , ,	,		- , , ,	-,,,	
, TOTAL		4.		•		. ,	•				
ITEM NUMBER 9				COEFF	ICIENTS	OF CORRE	LATION	,	ME	ANS .	
OPTION	WT	N	, Б	PB=ST	PB+TT	B⇒ST	BoTT		. ST	77	11
QF 124 N		.,				,			1		, 6.
0	٥	6	19.4	-,43	•,52	₽,62	-,75		2,83	32,33.	<u> </u>
	1	4	12.9			1 .61	. 70	Ç	V8,50	64,50	
, , ,	. 0	21 -		00		-,00	.17	•	5,10	49,19	•
TOTAL		31	•			• •					
۸		,	•		,						•
	42.									_	
TITEM NUMBER 10				COEFF	ICIENTS	OF CORRE	LATION		ME	ANS	•
OPTION	- NT	N	P	PB=ST	PB-TT	B-ST	B=T1	,	S.T	TT	70
		_	.		45	35	_ 16	•	4 1 4	40.10	72 - 28
0	Q	10	32.3	-,27		. 35	-,48	^	4.10	40.10	→ 20
C 1	1	. 0	,0 (.00	.00	.00	Ç	.00	,00	<u> </u>
204	0	21	67.7	. 27	,37	. ,35	.48		5,57	51.62	
0.01		21						•		,	

LERTAP 2	,0 .					SUMMA	RY ITEM :	21417217	, 03			•	•		
TEST NO	1 ACHI	EVEMENT	MONITOR	ING 8V			, '	z√ .	SUBTEST	6	SUBTRAC	TION ALGORI	THM		,
	n			•		COFFET	CIENTS O	F CORREL	ATION		ME	INS '	ŕ	,	, .
ITEM NUME	3EK 11	•					b .				•	**			
	OPTION	WT'	N	P		PB=ST	PB+TT	BeST	B=TT		ST .	. 77			•
	0	. 0	8	25,8		•,42	V-,48	-,57	-,65		3,25	36.00		05	
,	C I	1	0	.0	¢	. ,00	00.	.00	,00	C	.00	.00 52.04		83	
	2	0	23	74.2		.42	.48	. 157	,65		5,74	52104	,	- 67	
	TOTAL		31						•		`				
TTEM NUM	BER 12					COEFRI	CIENTS C	F CORRE	LATION		ME.	ANS	·		
	,		, L i	P		PB=ST	PB+TT-	B=ST	8+11		' ST	, TT			
	OPTION	WT '	N	r		ro-Ji	1,0411					1		0=	
	0	0	11	35,5		-,29	• ,52	-,37	. e,67	•	4.09	37,64		85	
	Ci	1	0 .	• •	Ç	,00	.00	.00 37	.67		.00 5.65	.00 53.55 🚓	, (- 59	
•	2	0	20 31	64,5		,29	,52	. 441	101				İ	-	١
	TOTAL		31								سىر	;		b	•
						COFFFI	CIENTS C	F CORRE	LATION		- HE	ANS		u 0	زول _{ى س}
ITEM NUM	9EK 13			•	·1·			٥					15.	** • ** · · · · · · · · · · · · · · · ·	
	OPTION	WT.	N	P		PB=ST	PB	B=ST	Batt ') استون ا	ا د آوه میرو	. TT """			,
	•	٨	15	38.7				m.46	-,59	,	3,92'	39,33		256	
* •	, C.1.	، الله الله الله الله الله الله الله الل	0)	2. P	C C	0'0	.00	,00	, .00	C	.00	.00			
	سنخ شير ،	0	181	61.3		,36	.47	46	.59		5,84	53,32	•	138	
	TOTAL	•	, (31						•			,			
` .	0		\			, r					Li S	ANS			1
TTEN NUM	18ER 14					COEFF	ICIENTS (OF CONNE	PULLON		mg			,	
	OPTIGN	WT	N٠	P		P8-ST	PB-TT	B⇒ST	8-11		\$T	.11		• • •	
				' A1 0'		36	-, 44	-,46	•,5Š		4,00	40.38		388	,
,	0	0	13 0	41.9				.00	.00		00	.00	-	269	
T T	5 C ¹	0	18	58.1	•	, 36		. 46	,55		5,89	53,33			
:	TOTAL		31					•							
									_	•	ر. 	i'ne		,	•
ITEM, NU	4BER 15					COEFF	ICIENTS	of Corre	LATION		.441	ANS		•	
	OPTION	WT	N	P		PB=ST	PB•TT	8=ST	B=TT		\$1	TT .		913	
	,	\	14'	51.6		-,39	45	6,49	-, 56		4,12	41.56		ΠV0	6
	0 C)	\ 0 1	16' 7, 1	3,5		,35		, 65	68		10,00	70.00	-	SUL	
333	5	0	14	45.2		,27	35	.34	,44		5,86	53,57			
	TOTAL		~ 31								el	•			
						_						4			

=	• • •				•			•						
TEST	NO 1 ACH	IEVEHE	NT MONITOR	RING BV	•		•	SUBTES	ST 6	SUBTRA	CTION AL	GORITHM		
ITEM	NUMBER 16		. 2	٠٠,	COEFF	ICIENTS	OF CORRE	LATION		Me	ANS			
	OPTION	w7	ı, N	P	PB-ST	PB∗TT	B#\$T	8-11	·	` ST	TT	•		
1.	O	. 0	16	51.6	29	-,47	-,36	~,58		4,38	41.31	٠,	0.11.7	.,
	, C 1	1	0	1.0 C			.00		C	,00	•		· 8.49	
	a	. 0	15	48.4	.29	.47	. 36	584		5,87	54,93	-	393	
, ,	TOTAL		31		b	, , ,	, .				. •	(-	
	1,			5° '					,				•	
ITEM !	NUMBER 17	·,	•		COEFF	ICIENTS	OF CORRE	LATION	٠,	ME	ANS			
,						,								
	CPTION	₩T	. N	₽	PB-ST	PB-TT	B=ST	B∞TŢ		ST .	e TT	•		
)	0	٥	. (4	54,8	-,27	-,44	-, 9 4	•, 55		4,47	42.12		929	
•	Ç 1	1	-1	.0 C	.00	.00	•	.00	c	.00	,00	-	7112	
	ž	Ō	14	45.2	.27		.34	.55	•	5.86	54,93		1.73	•
	TOTAL		31			• • •	•			•				
'														
ITEM I	NUMBER 18				COEFF	ICIENTS	OF CORRE	LATION		ME	ANS		•	
	OPTION	WT	N	P	PB=ST	PBeTT	B=ST	8-77		ST	TT		S . A.	
	OLITON	. "		. .	POW31	, PDV 1	D#31	04[]		31	1 6		726	
:	Q	0	18	58,1	-,15	-,32		40		4,78	41.94		186	•
	C 1	. 1	0	,0 C	.00		.00	,• 00		.00	,40		100	
	5	0	13	41,9	.15	,32	.18	40		8,54	53.38			
1	TOTAL		31				r							
ITEM !	NUMBER 19		48		COEFF	ICIENTS	OF CORRE	LATION		ME	ANS	•		
			• .		,		* . *							
•	OPTION	WT	N	P	PB-ST	PB=TT	8+\$7	Batt		S Y	• • • • • • • • • • • • • • • • • •		123	
	0	0	19	61.3	•,23	=,37	÷.29,	-,47		4,63	43,63		023	
	C 1	, 1	0	,0 C	.00	•00	.00	.00	Ç	,00	.00	Carrier Contract	334	٠,
	5	0	12	38,7	.23		,29	.47		5,83	54 . 6			
	TOTAL	,5	31		•								4.	
			,			,		<i>II</i> .	•					
ITEM !	NUMBER 20				COEFF	ICIENTS	OF CORRE	LATION		٠,	184			
•	OPTION	WŢ	N	P	PB=ST	PB=TT	B=ST	B=TT		ST	77		872	
,	0	. 0	21	67.7	19	-,39	-, 25	-,50		4,76	64,00	. 900	586	
	C 1	1	0	•0 C	.00	.00	0.0	.00	C	- 100	.00			
1.	5.	ō	10	32,3	,19	39	. 25	.50	-	5,80	54.10		•	
٠,	TOTAL		31									•		
3 J.	35							-				2		_

TEST NO. 1 ' ACH	IEAEHEN	T MONITOR	ING BY			₽.		SUBTEST	6	SUBTRA	STION ALGORITH	im
ITEM NUMBER 21			2.0		COEFFI	CIENTS O	F CORRE	,ATION		ME	ANS	
OPTION	WT	N	ρ		PB-ST	PB=TT	B-ST	8=11		ST	. ***	11.57
C 1 2 TOTAL	0 1 0	21 0 10 31	67.7 .0 32.3	C	19 .00 .19	-,39 ,00 ,39	.25 .00 .25	• • 50 • 00 • 50	C	4,76 ,00 5,80	44,00 ,00 56,10	+36 - <u>337</u>
TOTAL		•	,				1	٠,				
STEM NUMBER 22		~	٠		COEFFI	CIENTS C	F CORRE	LATION		ME	ANS	
OPTION	wT.	N	ρ		PB-ST	P8 ∞ TŤ	B#ST	B=TT		ST	TT	
0 C 1 2 Total	0 1 0	21 0 10 31	.0 32.3	¢	•.32 •00 •32	53 .00 .53	•,42 ,00 ,42	•.69 •00 •69		4,52 ,00 6,30	42,57 .00 59,10	730 - <u>438</u>
ITEM NUMBER 23		T.			COEFFI	CIENTS	OF CORRE	LATION		Me	ANS	
OPTION	w T	N	p			PB-11	8≖ST	B=TT		\$7	TT	504
, C 1	0	22 0 9	71.0 .0 29.0	С	17 .00	-,42 .00	, .22 .00 -,22	•.55 .00 .55	C	4,82 ,00 5,78	44.00 .00 57.44	- 227
TOTAL	•	31 0								•		
ITEM NUMBER 24					COEFF	ICIENTS	OF CORRE	ELATION		H	EANS	
OPTION		Ņ	· P		P8+ST	· PB=TT	8=57	•B≠TT	•	ST	· 1 1	600
, C 1	1	20	64.5		••37	,00	•.47 •00 •47	.00	C	4.40 .00 6.36	42.10 .00 58.45	- 481
2 Total		11	35,5		,37	,54	(7'	,		• - '		

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		\ ,						,,		•	,	er
LERTAP 2.0					SUMMA	RY "ITE	M STATIST	ICS		٤		PAGE 16
TEST NO 1 ACHI	EVEHENT	MONITO	RING BW		**			SUBTES	1	08JEC1	TIVES TEST	
ITEM NUMBER 1		,	•	•	COEFFI	CIENTS	OF CORRE	LATION		ME	EANS	ITEM DESCRIPTIONS
- OPTION	WT	N	р		PB-ST	P8+TT	B-ST	B-TT		57	TT	
1	Ő	0	•0		.00	.00	•00	.00		,00	.00	•
. 5	0	0	.0		.00	• 00	.00	.00		.00	•00	Numerousness
C 3	1	30	100.0	Ç	.00	•00	.00	00	C	9,87	53,80	Writes 0-99
4	0	0	.0	,	.00	.00	.00	.00		.00	.00	
TOTAL		30				,						
,		•		•	*						•	
•			•			•					· 1	
ITEM NUMBER 2					COEFFI	CIENTS	OF CORRE	LATION		W	ANS .	(
OPTION	WT	N sc	P		PB-ST	P8-T7	B≖ST	8-11		ST \	11	
C 1	1	30	100.0	c ·	.00	٥٥٥	.00,	.00	¢.	9,87	53.80	, • • • · ·
, 2	· i -	0	•0	•	.00	,00	-	,00		.00	00	Numerousness
3	Ŏ	Ŏ	.0		.00	,00	.00	.00		.00	.00	Represents 0-99
4	Ŏ	Ò	.0		.00	.00	.00	,00		.00	.00	•
TOTAL	,	30	••			,,,		•••		,,,	•,••	
)	•	•			1
•							•					
ITEM NUMBER 3			٠,		COEFFI	CIENTS	OF CORRE	LATION		· M	eans	
OPTION	WT	N _s	P		PB⇔ST	P8=TT	` 8=ST	8-11	,	ST	77	
ì	٥	0	.0		.00	.00	,00	.00		.00	•00	1
2	Õ	0	.0		.00	,00		.00		:00	•00	Problem Solving (A)
C 3	i	29	96,7	C	.18	03		+.06	Ç	9,93	53,72	Add-part part whole 11-15
4	ō	1	3,3	-	-,18	.03	~,45	.08		8,00	56,00	
TOTAL	·	.30	•		·	• •	-	,				
ITEM NUMBER 4					COEFF	CIENTS	OF CORRE	ELATION	!	М	EANS	
OPTION	WT	N	Р		P8=ST	₽8 • 11	·B=\$T	8-11		ST	11 /	

,83 -,38 -,10

.27 -.06 -.04 .40 C -.11 -.07

339

TOTAL

70.0 16.7 C 6.7 6.7

Problem Solving (A) Subt-simple separating 0-99

9,48 12,20 8,50 9,50

61.40 51.00 52.00

gradient			٠.	• *	Comin	NAME OF STREET)	g / 	*	116	à ,	•	
	OPTION	HT)N	. Р	P8-ST	P8-T1	B-ST	B-TT	8	Ţ	TT	i •	1
	1	0	. ^	•0	.00	.00	,00	• 00		00	£00	1	
•	,	0	1,	3,3	10,	.00	.03	.18	10		59.00	Decklos Coludes (D)	
	¢ 3	1	59 ,	96.7 C	01	-,08	03	-,15		86	53,62	Problem Solving (B) Add-simple joining 11-	15
•	4	Ö	0	•0	.00	.00	,00	.60		00	.00	Managembre Jossified TI-	1)
	TOTAL		30				ı				• 4		•
			•	•			AF ANDDE			ME	, 1816		
ITEH NU	MBER JEW				COLPE	ICLENTS	or corre			·			
•	OPTION	WT -	N	ρ .`	PB+ST	P3-TT	B-ST	8-77	. \$	iT .	. **		· .
	c į	1	4	13.3 C	.24	-,09	,37	-,14			E1.00		
	5	0	13	43,3	.21		156	.22	10,		56,38	Problem Solving (B)	
•	3 '	0 %	₿'	26.7	-••08		m, 10	.03		62	54,25	Subt-part part whole-ac	ddend
	4 Total	0	5 3 0	16.7	40	-,18	 59	·# ₄ 27	. B	ŚO	48,60	0-99	
		.				•		•	•	•			
		•		·		,					,	ı	
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		1	•					•				. , , ,	•
LERTAP	2.0	1			SUMM	ARY ITEM	STATIST	105				PAGE	17
TEST NO	O 1 ACHI	: EVEHENT	MONITO	RING 8W	•			SUBTEST	1 0	BJECT	IVES TEST	•	\
		١									*,*		•
ITEM N	UMBER &		,		COEFF	ICIENTS	OF CORRE	LATION	,	ME	ANS	1	
	OPTION:	WT	N	, Р	P8-ST	PB-TT	8-ST	B-TT	-	ST	77		
	C 1	1	28	93,3 C	.19	,38	,34	.66	C 9	.96	55,07		
	, ž	0	0	.0	.00	00	,00,			.00	.00	Order, Place Value	
	3 '	.0	5	6.7	19	· .	-,38	·#.72		•50	36,00	Ordering 0-99	
	4	Ó	0	. •0	•00	-,00	00	, ,00		,00	.00		
	TOTAL		30										
•	- ' Q	!			\		AP 86'00'	TI ATTON		Ue	ANS	1	
ITEM N	UMBER &8				COEFF	ICIENTS	OF CORRE	FRITON			,	1	342
	OPTION	¥Τ	N	P	PBUST	P8=17	8-37	B=TT		ST	TT		UTA

341 ERIC .23 -.52 .43 C 11.00 8,62 11.27 9.00 .34 -,76 .73 -,26 59,00 10.0 43.3 36.7 C .141 •50 3 Order, Place Value Place Value 0-99 ,47,77 59,36 54,33 -,58 -,42 13 11 3 C 3 .33 .57 -.15 .02 30 TOTAL

			•	•	oðler í	icients (OF COHRE	.aTION		Me	ZNA	
	OPTION	WT	N	۶	PB-ST	PB-TT	B=ST	8-11		, st	TT .	
	C 2 3 4 TOTAL	0 -	6 21 1 0 30	26,7 70.0 C 3.3 .0	60 .69 28	40 .35 .11	•,81 ,91 •,69	54 .45 .26	C	8.00 10.71 7.00 .00	45,37 56,67 61,00	Sentence Writing (A) Subt-comparison 11-15
ITEM N	الر NUMBER				COEFFI	CIENTS (OF CORRE	.ATION		ME	ANS	
	OPTION	WT	N	· P ,	PB-ST	PB=TT	B-ST	BeTT	•	ST	TŢ	.1
	C 3 4 TOTAL	0 0 1 0 .	1 2 27 0 30	3.3 6.7 90.0 C	28 41 .51	.11 .02 .05		.26 03 08	Ç	7,00 7,00 10,19	61.00 63.00 53.59	Sentence Writing (4) Add-part part whole 0-99
e								<i>\</i> ,		1 :		•
. 1	· · · · · · · · · · · · · · · · · · ·		,									

LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18 TEST NO 1 ACHIEVEMENT HONITORING BW SUBTEST 1 OBJECTIVES TEST ITEM NUMBER COEFFICIENTS OF CORRELATION MEANS OPTION B-ST B-TT N PB-ST PB-TT 11 ST 1 3,3 1 -,28 -,28 -,69 35,00 -.67 7,00 5 3,3 1 -.18 **.**,26 -,45 -,63 8,00 36.00 Sentence Writing (B) СЭ 58 93,3 C .34 .39 ,59 .68 C Add-simple joining 11-15 10,04 \$5,11 0 .00 .00 ,00 .00 .00 .00 TOTAL 30 ITEH NUMBER 1012 COEFFICIENTS OF CORRELATION MEANS OPTION WŢ PB-ST PB-TT Butt . B-ST , TT ST

-.24

,84

-,48

-,52

*.11

·=,82

.77 C

9.00

11.21

8,75

8,50

51.00

62.14

41.00

52,33

Sentence Writing (B)

Subt-join-addend 0-99

+.06

,62

m,61

₩.06

-.12

.67

-,36

-,36

6,7

26,7.

20.0

46.7 C

14

6

6

30

TOTAL

21.3

TEST NO 1 ACHI	EVEMENT	MONITOR	ING 8W		J		• • • •	SUBTES	T 1	OBJECT	IVES TEST	
ITEM NUMBER 13					COEFFI	CIENTS O	r CORREL	ATION		. ME	ANS	
OPTION	wT	N	P		PB=ST	PB+TT	8-51	B-TT		ST	TŢ	
1 C 2 3 4 TOTAL	0 1 0 0	1 29 0 0 30	3.3 96.7 0	C	18 .18 .00	.05 05 .00	.45 .36 .00	.11 ~.09 .00	¢	8,00 9,93 .00 .00	57.00 53,69 .00 .00	Algorithms Addition Algorithm
IJEM NUMBER 14				^	COEFFI	CIENTS 0	F CORRE	LATION		ME	ANS	•
OPTION	WT	Ŋ	P		P8-ST	PB=TT	B-ST	B=TT		ST ,	11	
C 1 3 4 TOTAL	1 0 0	11 14 3 2 30	36.7 46.7 10.0 6.7	C.	.64 ,50 ,21 ,02	.42 09 51 01	,82 =,63 =,36	.53 11 88 01	C	11.45 8.36 8.67 10.00	60.73 52.57 34.33 53.50	Algorithms Subtraction Algorithm

SURHARY ITEM STATISTICS -

TEST NO 1 ACHI	EVEMENT	MONITOR	ING BW				SUBTES	T Z	SENTEN	CE WRITING	FREE RESPONSE
ITEM NUMBER 1	•			ÇÓEFFI	CIENTS	OF CORRE	LATION		ME	ANS	ITEM DESCRIPTIONS
OPTION	TK	₩ .	P .	P8=\$T	PB-11	B-\$1	8-11	•	\$1	ΤΤ	
0	Q	0.	•0	00	.00	.00	00		.00	.00	
Ci	1	28	93,3 (,59	,28	1.04	.49	C	3,21	54,75	Sentence Writing
à	Ö	2	6,7	0,59	-, 28	=1,15	-,54		1,00	40,50	Subt-simple separating 11-15
TOTAL		30				1					
· · ·				•					÷	•	
ITEM NUMBER 2				COEFF	CIENTS	OF CORRE	LATION		ME	ANS	
05110N	₩T	N	ρ	PB=ST	PB-TT	B=ST	8-11		ST	Π.	
0	0	1	3,3	01	•,26	-,03	-,63		3,00	36,00	Contract Hadada
ci	1	14	46.7		.69	1.00	87	C	3,86	63,14	Sentence Writing
2	0	15	50.0	79	59	99	-,75		2,33	46,27	Subt-comparison 0-99
TOTAL	·	30			•						
••••		*					٠.				
ITEM NUMBER 3			•	COEFF	ICIENTS	OF CORRE	LATION		ME	ANS	
OPTION	WT	·N +	Ρ.	PB+ST	PB+TT	B=ST	8+11		ST	77	
0	0 .	0	.0	.00	.00	.00	.00		.00	.00	Carrana Unividad
C i	ì	30	100.0		.00	.00	.00	C	3,07	53,80	Senbence Writing C-99
2 .	0	Ö	•0	.00	.00	.00	.00		.00	.00	You-elimbre lorurus 0-33
TOTAL	•	30	,,		•••				•		
	•									i	•
ITEM NUMBER 6				COEFF	CIENTS	OF CORRE	LATION		ME	ANS	
OP710N	Wī	N	ρ	PB=ST	P8-TT	8+57	8-11		57	11	•
0	0	0	.0	.00	.00	.00	,00	٠,	. ,00	•00	Contone Uniting
c i	i:1	20	66.7		.21	1.05	.27	C	3,60	55,70	Sentence Writing Subt-part part whole-addend
5	0	10	33.3	-,81	21	-1,05	27		2,00	50,00	11-15
TOTAL	•	30				•					77-77

PRUINC PA													
TEST NO 1. ACHI	EVEMENT	MONIJO	RING 8W					SUBTES	iT 3	ADDITI	ON FACTS		
TEM NUMBER 1	•				COEFFI	CIENYS	OF CORRE	LATION		HE	ANS	ITEM DESCRIPT	TIONS
OPTION	WT	N	P		PB#ST	PB-TT	B=ST	B⇔TT		ST	17		
ń	٥	2	6,7		51	-,36	-,99	70		6,50	36,50		
¢ 1	0,	. 27	90.0	Ċ	.76	.58		• 95	C	11.22	56,26	2 + 4	
2	0	1	3,3	•	57	*,47	-1.37	ml.13		4.00	55.00		
TOTAL	*	30	•										
					CAFFFT	CIENTS	OF CORRE	LATION		Me	ANS	·	
ITEM NUMBER >		•			COLIT	.0361114	,					4	
OPTION	WT	, N	. P		P8=\$T	PB⇔TT	B⇔ST	BeTT		ST	א אין ע		
A .	٠	. 5	. 6.7		63	-,51	-1.22	+,99		5,50	29,50		
0	0	27	90,0	c	.76	,56		.90	C	11,22	56,15	6 + 3	
C 1	0 -	1	3.3	٧	-,40	• 55		- 52		6,00	39.00		
TOTAL	ŭ	30	713		7,70		•	·	l			•	·
, ,		30				•		•					
TEM NUMBER 3:					NCOEFF1	CIENTS	OF CORRE	LATION		ME	ANS		
OPTION	HT	N	p		PB-ST	PB-TT	B-5T	Batt		S 7	77		÷
			. 4		4.0	- 24	~ ,96	-,63		6,00	36,00		,
, , , 0	0,	1	3,3	^	= , 40	•.26		.60		11.00	54,96	5 + 2	•
C 1	1	58	93,3	Ų	•57	,34 -,22		- 52		5,00	39.00	J	
2	0	: 1	3,3		40	-155	-,,,	,	•	-044		· .	
TOTAL		30										•	
TEM NUMBER 4		e			ÇOEFF:	CIENTS	OF CORRE	LATION		M	INS		
/ OPTION	WT	· N ·	ρ		P8-5T	PB-TT	8-51	8-11	•	\$7	. 11		
J			۸ ۸		1 A	_ '44	~. 96	- ,63		6.00	36.00		
0	0	1	3,3		40	-,26		.92		11,26	56.19	2 + 3	
C 1	1	27	90.0		3 .82 24	,56 ,49		• . 95		5.00		£ , J	
2	0	2	6.7		69	-,49	41194	- 170		~ 6 V W			
TOTAL		30			•			,		•			
ITEM NUMBER 5					COEFF	ICIENTS	OF CORRE	LATION	•	Ж	eans	•	
OPTION	WT	N	P		P8=ST	P8-T7	8-ST	Bett		`\$7	TT.		
0		0	• 0		.00	.00	.00	.00			00		
	ì	30	100.0	Ĉ	•00			.00		10.67	53,80	5 + 0	350
19 °1	ò	0	0	•	•00	00		00		.00	.00		900
TOTAL	•	30										t .	
												'	

TEST NO	1 ACHT	EVENENT	MONITOR	ING BW					SUBTEST	3	ADDITI	ON FACTS	•	ને વ
* .						COEFFT	CIENTS O	F CORREL	ATION		ME	ANS		
ITEM NUM	BER 6					OULI 1	V	. •				•		
	OPTION	WT ·	N	, P .		PB-ST	P8-TT	B=ST	B=TT	•	ST	TT		
				۸		•00	,00	.00	,00	٠.,	.00	.00		•
	0	0	0	,0	r	.31	,25	,60	.47	Ċ	10,79	54,38		3+3
	C 1	3	29	96.7	v	-,31	25	m,76	60		7.00	37,00		1
	5	0	1	3,3		-127	-114	• • •	•					,
	YOTAL		30											•
•							ď		_			C		
ITEM NUM	RER 7	•				COEFFI	CIENTS (F CORRE	LATION		ME	ANS		
TIEN NON	UEN !		• .					n c7	BeTT	:	ST	. 11	,	
	OPTION	WT	N	P		PB=ST	PB-TT	8-ST	Dell	,	31	٠. ،		
				f3:3		~ =	4.4	-1.37	-1.13		4.00	22.00		
	0	Q	1			-,57	=,47		.86	C	11,07	55,46		9 + 2
	Cl	1	28	93,3	Ç	,69	.49	1.22	-,32	•	6.00	39.00		
	5	0	1	. 3,3		, ~.4 0	55	", 9 6	~,52		****			
	TOTAL		30							•	•	•		î.
		•												
						COFFE	CIENTS	OF CORRE	LATION		M	ANS		
ITEH NUN	iber a	ģ.				UU	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•						
•	OPT10N	₹* ¥T	N	Р		PB=ST	P8-TT	B-ST	8-11		ST	Tg		
	DELION	,,,									7 54	35.50		
	0	0	2	6.7		-,39		*, 75			7,50	55,11		6+6
	C I	1/	28	93,3	Ç	.39	,39	,68	,68		10.89			
	5	0	0	.0		.90	.00	.00	.00		.00	.00		
,	TOTAL	•	30	•					4					
							•							-
		į.				AAFEE	TATENTE	OF CORRE	LATION		М	EANS		
ITEM NU	MBER 4					COLFF	TOTENTS	of Anum			. 1	•		
,				p		PREST	PB-TT	B-ST	B=TT		ST	, TT		
÷	OPTION	W٢	N	,		F9"#1	, - , ,				4	2		
		^	2	6,7		- ,69	-,49	-1,34	₹,95		5,00	30,50		_
	0	0		86.7	Ĉ	,57	-	.87	.74	Ç	11.15	56,19		4 + 7
	C 1	1	26	6.7	٠	-,08		+,16	÷,32		10,00	46,00		
	2	0.	5	441			•••			•				
	TOTAL		30		ı,	•	•							
į.										٠,	N.	C		
at. r. c 3/11	ware to					COEFF	ICIENTS	OF CORR	ELATION		Ņ	EANS		
ISEM NO	MBER In										ST	TT		
	OPTION	₩T '	N	P		PB=51	PB-TT	· B=ST	B∞TT		21	"1		
	01 11011	*	,			ι,		`	67		7.14	37,71		
	0	. 0	7	23.3		89		-1,23			11,90	58.70		7+6
	Ci	1	30	66,7	·C	.80		1.04	,71		10.67	58,67	•	, , , ,
(*)	. 2	ō	3	10.0		.00	.13	,00	.52		TA P S I	-4101		
	TOTAL	•	505											
	IAINE													,

TEST NO 1 A	CHIEVEME	CTINON TO	RING 6W				SUBTES	1 1	ADDITI	ON FACTS	
ITEM NUMBER 1	1			COEFF	ICIENTS C	F CORRE	LATION		Me	ANS	•
OPTIO	In WT	N	P	PB+ST	P8-TT	B≠\$T	₿₩₹₹		ST	TT	
	0 0	6	20.0	-,69	•,52	-,98	~, 74		7.67	40.67	
, C	1 1	, 23	76.7 C	.67	.47	, 93	,65	¢	11.48	57.09	9 + 7
	5 0.	4	3,3	~, 06		-,14	.11		10,00	57.00	-2
TOTA	i.	30								•	
2 ,									,		
ITEM NUMBER 1	.2			COEFF	CIENTS C	F CORRE	LATION		ME	;ans	
01140	N WT		þ	PB-ST	PB-TT	8-\$1	8-11		SŤ	, 17	•
	0 0	3	10.0	~. 51	-, 39	r.87	-, 67		7,33	39.00	•
C	1	27	90,0 C	.51	39	,83	,63	Ç	11,04	55,44	6 + 4
1	2 0	0	, ,0	,00	.00	.00	.00		,00	.00	
TOTA	ıl '	30			J				• •	• • •	

TEST NO 1 ACE	HIEVEHENT	CTINOM 1	RING 6W					SUBTES	: 5 T 4	SUBTRA	CTION FACT	·S
ITEM NUMBER 1			1		COEFFI	CIENTS	OF CORRE	LÁTION		t Me	:ANS	ITEM DESCRIPTIONS
OPTION	нT	N	P		PB-ST	P8-TT	8-51	B⇔TT		ST	TT ,	
c	0	2	6.7		- , 67	-,34	-1,29	-,66		2,00	37,50	
c :	1	28	93.3	C	,67	,34	1.17	,60	Ĉ	9.16	54,96	3 - 2
. 5	0	0	.0		.00	.00	.00	00	•	,00	. ,00	;
TOTAL		30					-			4-4		
ITEM NUMBER >					COEFFI	CIENTS	OF CORRE	LATION		Mg	ANS	
OPTION	W7	N	þ		PB-ST	PB-TT	8 ~ \$T.	BeTT		5Y	71	
n	. 0	1	3.3		m:33	∞,2 6	-1,29	*. 63	,	1.00	36,00	
. 0 1	1	27	90.0	C	,75	,56	1,22		Ċ	9.37	56,19	6 - 4
á	Ō	5	6.7	•	-,52	a,49	-1.00	m.95	٧	3,50	30,50	,, ,
TOTAL		30			- 70.0	.,,,,		<i>3</i>		9130	40120	
ITEM NUMBER 3			,		COEFFI	CIENTS	OF CORRE	LATION		ME	ANS	•
OPTION	WT	N	ρ		P8=S7	PB=TT	B-\$T	B⇔ŢŢ		ST	TT	
ņ	0	2	6.7		67	34	-1,29	₩.66		2.00	37,50	
Ci	ì	28	93.3	c	.67	,34	1,17	.60	r	9,18	54,96	9 - 1
2	. 0	0	- 0	•	.00	.00	.00	.00	U	*00		7 - 1
TOTAL	·	30	1		100	•••	144	•••		• • • •	•00	•
ITEM NUMBER 4	e.				COEFFI	CIENTS	OF CORRE	LATION		ME	ANŞ	
OPTION	WT	N .	P		P8-ST	P8-TT	8-57	8=11		ST	TT	a.
0	0	3	10.0		~.30	-,34	~. 50	•,58		6,33	41.00	
C 1	. 1	27	90.0	Ĉ		. ,34	.48	.55		8,96	55.22	7 - 3
Ş	0	Ö	.0	•	.00	.00	,00	,00	•	.00	و00	, <u>.</u>
TOTAL		30	•			, , ,	,	, , ,	•	,,,,		
ITEM NUMBER 5					40°F#1	ATELGA	AF AADDE	17101		44-	·	
TIEN HONDER					COEFFI	ČIENI 2	OF CORREL	PAITÓN		ME	ANS	
OPTION	WT	N	P		PB=ST	P8-77	8-51	8-11		ST	TT	
0	0	2 .	6.7		-≠ •67	-,3 4	-1,29	∞,66		2,00	37,50	
C 1	, 1	28	93,3	Ç		.34		. 60	C	9,18		6 - 1
	10	0	. •0		.00	,00	.00	.00		•00	.00	•
TOTAL	'	30				ł						•

LERTAP	2.0					SUMMAR	(† 115m	SIMIA	, ••		•	•		
TEST NO	I ACHI	EVEMENT	MONITOR	ING 8W				•	SUBTEST	r 4	SUBTRA	CTION FAC	TS	
, ITEM NU	JHBER 6					COEFFIC	CIENTS	OF CORRE	ATION		ME	ANS	L.	
:	OPTION	TW	N [']	P		PB=ST	PB=TT	B +\$ Y	8-77		\$7	. 11		
•			_	, •		•.62	* ,52	-1.20	-1,01		2,50	29,00		
	0	0	5	6.7	^	,46	,34	.75	55	C	9,11	55,22	7 - 5	
	Çį	, 3	27	90.0	Ų	.09		22	,40	,	10,00	65,00		
	2	0 3	i	3,3		109		,	•					
	TOTAL		30			٠.	,			-				
										•	ME	ANS		•
ITEM N	UMBER 7					COEFFI	CIENTS	OF CORRE	LATION		mg.	MUZ		
	-48+4	u♥	kı '	Р		PB-ST	P8-TT	9 - 5T	B=TT		ST	TT		
	OPTION	WT	N	r		P5*31	10-11							
	. 0	0	S	6,7		-,52	-,30	-1,00	•, 58		3,50	39.50	10 - 4	
	C 1	1	27	90.0	C	•50	.33	,82	, 53	Ç	9,15	55,19	10 - 4	
	2	Û	1	3,3		12	-,13	~, 29	31		7.00	45.00		
,	TOTAL	•	30	- • -										
	12176													
						ANTEST	CTENTS	OF CORRE	LATION		ME	ANS	•	
ITEM N	UMBER A					COEFFI	Affais	DI 90						i
	OPTION	WT	N	ρ		PB-ST	PB=TT	B#ST	B=TT		ST	11		
	OPTION	# I	.,	•					4-			45 55		,
	0	ō	11	36.7		-,64	 50		-, 63	_	6,45	45,55	13 - 9	*
	Ci	ì	13	43,3	C	.73	.58		.73	Ç	10,92	62,23	13 /	
	2	0	6	20.0		-,13	12	-,19	18		8,00	50,67		
	TOTAL	•	30	-					•					
	14,-6						•							•
						00555	PATENTÉ	OF CORR	ELATION		M	EANS		
ITEM N	IUMBER 9					GUEFF.	161EILI 3						,	
	4 DT # 6 U	, WT	N	Р		P8-ST	PB-TT	8-ST	BeTT		51	TT		
	OPTION	R)	14	•							•	45 AA		
Γ	0	0	14	46.7		., 59	-,65		82		7,00	45.00	1, 0	
	C 1	1	12	40.0		,55	,52	,76			≠ 10,50	61,83 60,50	14 - 8	
	2	Ô	4	13.3		.08	.21	,13	,33		9,25	00,50		
	TOTAL	•	30						•					
	14146							4						•
						COFFF	TCIENTS	OF CORR	ELATION		M	EANS		
ITEH !	NUMBER 10					COST	10.00					••		
	OPTION	WT	N	р		PB=ST	PB=TT	8 -5 T	Bett		ŞT	77		
	QF 1 TON	17. 1	•••						_ 60		6,50	44,14		
	0	0	14	46.7		77					10,62	62,25	11 - 7	358
	C 1	1	16	53.3							.05	;00	<u> </u>	000
35/	2	0	0	.0	1	•00	00	•00	ęvv		 4 17	,,,		•
00.	TOTAL		-30					Å						b

ERIC Fouridated by ERIC

TEST	NO	1	ACHIEVEMENT	MONITORING	AW

SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 11					COEFFI	CIENTS	OF CORRE	LATION		HE	ANS		
OPTION	WT	N	p		PB-ST	P8-77	B=ST	8-11		ST	11		
0	0	11 .	36,7		 56	. .45	P.72	-,59		6,73	46,18		
Cl	1	15	50 - 0	C	. 41	,36	,52	146	Ç	9,80	58,40	12 - 4	
2	٥	4	13.3	•	.19	111	,30	.18		10,00	57,50	12 - 4	
T0TA.		30					·						
ITSM NUMBER 12	ı.				COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		
OPTION	нТ	N	P		P8+\$T	P8 - TT	B+ST	8-77		ST	Ф ТТ		G
0	0	15	50.0		-,74	-,57	~,92	~,71		6,73	46,60		
C 1	1	13	43,3	Ç	.70	48	,88	,61	C	10,85	60,77	17 - 9	
5	0	2	6.7		,08	,18	,15	,35		9,50	62.50	•	
TOTAL		30			·		-			-		•	

TEST NO	D 1 ACHI	ENEMEN.	T MONITO	RING 6W					SUBTES	T 5	ADDITI	ON ALGORIT	HM :	222
ITEM N	JMBER 1		,			COEFFI	CIENTS (of Corre	LATION		ME	ANS	ITEM DESCRIPTIONS	. 2
	OPTION	.)\r	N	P		PB-ST	PB-17	B-ST	8=11		ST	TT		
	0	0	. 0	• 0		.00	•00	.00	.00		,00	.00	- 1	
	Ci	1	28	93,3	C	,23	.28	,41	.49	C	16,11	54,75	51	•
•	ž	Ö	5	6.7		23	28	-, 45	+.54		10,50	40.50	+ 27	1
	TOTAL	·	30								•		, <u>far</u>	
к,				۴			ť		. (•				
ITEM N	UMBER ?			•		COEFFI	CIENTS	OF CORRE	LATION		ME	ANS		
	OPTION	WT	N	P		PB-ST	PB+TT	8-57	8-11	1	ST	77	· •	
	1			,									40	
	0	9	0	t. 0		, ,00	.00	,00	.00		,00	00		
	Cl	1	30	100.0	Ç	•00	.00	.00	.00	Ç	15,73	53,80	+ 48	
	5	0	0	• 0		•00	•00	,00	•00		.00	.00	CONTRACTO	
	TOTAL		30											
	•													
ITEM N	UMRER 3					COEFFI	CIENTS	OF CORRE	LATION		MĘ.	ANS	•	
1.	OPTION	- WT	N	P		P8=ST	PB-TT	8 - \$T	B=TT		\$1	. 11	25	
	· (t	0	0	.0		•00	:00	.00	,00		,00	.00	+ 22	
	Cl	1	29	96.7	C	, 45	,47	,87	,90	C	16,24	54,90	T, <u>LL</u>	
	ž	0	1	3,3		-,45	-,47	-1,10	-1,13		1,00	\$5,00		
	JATOT		30			÷		• •				•	•	
ITEM N	UMBER 4					COEFF	ICIENTS	OF CORRE	LATION		ME	ÄNS	• • • • • • • • • • • • • • • • • • • •	
	OPTION	WT	N	ė	:	PR⊯ST	P8-T1	B-ST	B - 7⊺		ST	TT		•
	QF (10M	A !	,,,	'		1 5 01		• •				•	362	٠.
	0	0 -	0	.0		.00	.00	.00	.00		.00	.00	005	
	C 1	1	29	96,7		,45	,47	. ,87	190	C	16,24	54,90	+ 205	
	5	Ō	1	3,3		45	=,47	-1.10	-1.13		1,00	22,00	-	
	TOTAL		30				`			•			•	, .
									,				, ' 1	
ITEM N	UMBER 5					COEFF	ICIENTS	OF CORRE	ELATION		M	ANS	,	
	CPTION	ΝT	N	P		P8=ST	PB-TT	8-ST	8-11		ST	. 11	417-	
361			0	, Û		.00	.00	.00	.00		.00	00	+ 212	362
عران	0	0	. 58	93.3		,36		,64			16,32			002
	¢ 1	0	2	6.7	•	•,36	 ,34	•.70	- 66	•	7,50		•	
		٧	30	¥ ¶ ſ		-10.	107	•	• • •		•	,		
•	, TOTAL		34					-						



TEST NO 1 ACHI	EVEMENT	' MONITOR	RING 8W				,	SUBTES	T 5	ADDITI	ON ALGORI	THM
ITEM NUMBER 6					COEFFI	CIENTS	OF CORRE	NOITA.		, ME	ANS	. :
CPTION	WT	ħ	p :		PB≈ST	PB=TT	BaST	Bwit		ST '	11	
0	IJ.	. 0	.0		.00	,00	.00	.00		.00	.00	683
. C 1	1	28	93,3	C	.48	,42	, 93	.73	C	16,50	55,21	
Ż	0	2	6,7		-,48	•,42	-,92	w.81		5.00	34,00	m + 215
TOT. L		30										-
							t					
ITEM NUMBER 7					COEFFI	CIENTS	OF CORRE	ATION		ME	AN\$	
OPTION	ĦŦ	Ņ	· p		PBMST	P8-TT	8=ST	8-11	•	\$1	11	
,	٨	,	3,3		-,3 0	- ,25	•,73	o.60		6,00 .	37.00	64
0 C)	0	1 24	80.0	Ċ	.75	.66	1.06	.34	c ·	18.00		, 9
2	Ô	. 5	16.7	٥	-, 66	 98,e	.,99	• ₀88		6,30	37,00	7
TOTAL	•	30	•••		- 1011			***			.,	,
171												•
la .					,					4.4 41		•
ITEM NUMBER A					COEFFI	CIENTS	OF CORRE	LATION		Ma	aN5	
OPTION	WT	N	P		P8#ST	PB=TT	8-51	8=11		ST	ग्र	6
. 0	0	0	.0		.00	.00	ûO.	,00		.00	•00	υ · Ο · Ι
c "	ì	.26	100	Ç	,68	.58	1.05	.89	C	17,35	56.69	+ 84
ž	0	4	13.3		68	⊎ ,58		* 192		5,25	35.00.	
TOTAL		30	;								,	
	۸.											•
ITEM NUMBER 4					COEFF	CIENTS	OF CORRE	LATION		. M	ANS	
OPTION	HT	N	۾		28 ∞S T	PB-TT	B-ST	B#71	•	57	ĩΥ	7
- •			•									+ 59
0	0	1	3.3		-,39	25	∞. 73	60		6.00	37.00	1 27
C 1	1	24	60.0		,64	.71	.91 81	1,00 -,96	Ų	17.67 8.40	59,29 35,60	
2	. 0	5 30	16.7		54	o , 64	m * G ?	9,10		0.40	93160	
TOTAL		16				•				•	•	
TTEM NUMBER 10					CORFF	CIENTS	OF CORRE	LATION		M	EANS	
OPTIGN	Νï	١.	þ		P8-57	P8-71	B-ST	0~11°		\$1	11	19
	n.,		·								•	17
· · · · · · · · · · · · · · · · · · ·	0	0	• • 0		.00	.00	.00	00 ئ		• 20	.00	→ 11T
C 1	1	23	76.7	C	.75	.56		,77	Ç	18,22	67.74	
	٠,	7	23,3		-,75	o.56	-1.03	□, 78		7,57	40,86	•
. TOTAL		30	•							}		
						•						264

ERIC

PRILLY, CIA						•			-		,				
TEST NO 1 ACT	HIEVEME	NT MON	ITORI	NG BW					SUBTES	T 5	ADDITI	ON ALGORI	THM		
•											<i>i.</i>		•		. 224
ITEM NUMBER 11						COEFFI	CIENTS	OF CORRE	LATION		ЭМ	ANS	1		+`
OPTION	WT		Ν.	P	٠,	PB=ST	PB≠Tĭ	8=57	BeTT		ST	, IT			
Ó	0		0	,0		•00	.00	00	.00		•00	•00			
C 1			5	83,3	Ċ			1,08				57.24		56	
2	0		5	16,7			- ,61	1.10	91		5,80			- U	
`TOTAL	٧		0	1011		, 4114	-101	,	· •••		- 0 - 0		· •	+ 34	+
IOIME			ν	١							•	•		-	
•				(,		••	
ITEM NUMBER 12		•		,		COEFFI	CIENTS	OF CORRE	LATION	,	ME	ANS			
	ور		41	*		Bo - 64	no **	, 12-0	8_77		51	TT			
OPTION	, W1	•	N	P		hR=21	PD+11	B=57			31	ŢŢ.			
. 0	. 0		1	3.3		-,30	-,25	-,73	-,60	•	6.00	37,00		<u> FQ</u>	
c i	1		5	50.0	c		.60					61.40		J	
2 ,	Ô		4	46,7	•	-,51	51	-,64	* ,64		12.43	46,86	ţ•	+ 65	1
TOTAL	•	_	0				•••	•	•		•			, 44	
, 10146		·	•							•					
,						******		OF CORRE	LATTAN		MS	ANS		•	
ITEM NUMBER 13						COEFFY	ICIEN15	UP CURRE	CHILON		ing	Alia		•	
OPTION	WT		N	P		PB-ST	P8-11	B=ST	8-77		51	TT			
		,										. 4		انما	1
0	0		0	, 0		.00			.00			.00		104	
° c i	1	1	, 6	53,3			,54			Ç			. 4	- 020	
2	0	1	4	46.7	V	-,77	-,54	~ ,76	•.68		10,79	46,50	f . '	, 821	
TOTAL		, :	10			1									
		0						,						i .	
						A.C.	PATPUTE	AE ANDRO	1 ATTON	,	MI	EANS			
ITEM NUMBER 14		•				COLFFI	ICIENIS	OF CORRE	:EMITON		(**)	- Mile			
OPTION	. WT	.*	N	P		P8-\$1	P8-T7	B=ST	BeTT		ST ·	TT			
· .				1			,					2=		559	
0	0		1 .	3,3		-,30	-,25	-,73	-,60	_	6,00	37.00	L	F 236	
C 1	1		7	56.7	Ç	.80		1.00	90	C	19.94	61.71	٦	236	
2			2 .	40.0	•	70	-,63	., 88	-,80		10,58	64.00		-	
TOTAL		;	0				. •								
									, 4				•		
ITEM NUMBER 15						COEFF	ICIENTS	OF CORRE	ELATION		· M	EANS	•	•	
TIEN MANAGE IN								_						200	
OPTION	ΚT		N	P		PB=ST	PB-TT	8-\$7	8-11		ST	***		328	1
	_					 A A	A.A.	nA	. ^ ^		.00	•00	7	+ 349	366
0		v.	0	.0	_	۰00	.00		.00 .83		19.41	61.06	1		000
01			17	56.7	Ü	.70			.83 • .83	٧	10.92	44,31	•		
}60			13	43.3		-,70	-,66	-,00	-107		10175	.4101			
TOTAL			30										•	,	•



LERTAP 2.0					SUMMA	RY ITEM	STATIST	ICS ·			
TEST NO 1 AC	HIEVEMEN.	T MONITOR	ING 8W					SUBTES1	5	ADDITI	ON ALGORIT
				,)			
TEM NUMBER 16				tio	COEFFI	CIENTS	OF CORRE	LATION		3H	ans
OPTION	NT	N	P		PB-ST	P8-T1	8-\$1	8-11		ST	**
	۸	2	6.7		25	-,25	E,49	=,48		10.00	42.00
c <u>i</u> l	. 0			•	.86	.73	1,11		C	19,40	60.35
G 1	1	50	66.7	•	-,77	p.64	-1,04		-	8,00	40.37
Now 5		8	26.7		• • / /	B D	-114.	-,00	•	-,	
LATOT	i	30			,						, ,
ITEM NUMBER 17	ı				COEFFI	CIENTS	OF CORRE	LATION		. ME	ANS
TIEM NOUGER 11											_
OPTION	WT	N	P		P8-S1	78-17	8.ST	8-17		\$T	77
0	. 0	4	13.3	,	-,47	m,37	-,74	-,59°		8,50	41.75
, C 1		19	63.3	C	.85	.80	1.09	1.02	C	19,63	61.47
		*7	23.3	•	0,59	w,61	-,81	-,84		9,29	39,86
. 707AL	•	30	2313		-141	-,	,	,	1.7	,	
						•					
ITEM NUMBER 18	3				COEFF	CIENTS	OF CORRE	LATION		ME	ANS
02110	, WT	Ñ	p		P8=ST	PB-TT	B≠ST	B-T?		\$1	TT
	,	3	10.0		•,35	-,28	-,60	-,47		9,33	43.33
(66.7	e	,86	73	1,11	.95	¢	19.40	60,35
C		50		v	-,71	-,62	_	0,86	٠,		39,57
	-	7	23.3		-011	-,06	-,.0	,	. (•
TOTAL	•	30									

+ <u>272</u>

+ <u>383</u>

ITEM NUMBER 19				COEFFI	CIENTS C	F CORRE	LATION		ME	ANS			
OPTION	WT	H	p	PB=ST	PB=TT	8 - \$T	BeTT		ST	ŦŦ			347
0	, 0	δ	20,0		~ ,40		•.37		10,83	43,67		+	589
C 1	1	12	40.0 C		.52	, 95	,66	Ç	21,25	61,83 50,83		•	-
5	0	13	40.0	~,42	19	-,53	· . 24		12,67	90103	3		
TOTAL		30		`									

ITEM NUMBER 20		•		COEFFI	CIENTS 0	F CORRE	LATION		ME	ANS.
OPTION	WT	N	ρ	PB-ST	PB=TT	B=5T	8-11	•	ST	TT
*0 C 1 2 TOTAL	0 1 0	7 14 9 30	23,3 46,7 30,0	30 C .77 56	•,25 ,64 •,46	.,42 .97 .,74	35 .80 61	C	12,43 20,71 10,56	46.00 62.43 44.89

+ <u>295</u>

TEST NO 1 AC	CHICVEME	NT MONTO	RING BW				SUBTES	7 5	ADDITI	ON ALGORITHM		
ITEM NUMBER 3	!		•	GOEFFI	CIENTS	OF CORRE	LATION		· ME	ANS		
OPTION	N WT	N	P	PB#ST	P8+TT	B#ST	8411		ST	ĬĬ		•
() 0	4	26,7	-, 26	-,17	- ,35	a,24		13,12	50,12	(996
C		. 8	26,7	C .63	47	,84	.54	C	22.00	63,75		
i		14	46,7	32	•,26	w, 41	-,33		13,64.	50.21	+	317
TOTAL	-	3 0				•	;				. •	-
ITEM NUMBER 2	?			COEFFI	ICIENTS	OF CORRE	LATION		ME	ANS		
OPTIO	v VT	N	Р	72-00	P8⇒Tĭ	B≖ST	B=TT		ST	††		
, OPITO	V 81	IN.	•	P8-31	ro*!!	D#31	0=		31	7.1		
	0 0	15	50.0	10	-, 13	. =,12	-,16		15,13	52,20		69
C	1	7	23,3		.44	,59	,61	Ç	20,43	63,86		
	5 0	8	26,7	30	-,28	0,40	37		12,75	48.00		34
TOTAL	_	30'								•	ملير ،	57
			**						¢		Т	
ITEM NUMBER 2	3	ć.	í	COEFF	CIENTS	OF CORRE	LATION		ME	ZHA;		
OPT10	N WT	N	P	PB=ST	PB-TT	B ≈ \$1	8=TT		ST	TT		i
	0. 0	17	56.7	-,28	w,27	-, 36	 34		14,24	50,82		86
_ c	-	7	23.3		41	,59	56	Ç	20,43	63,14		54
•	2 0		20.0	10	10	-,15	•.14		14.50	51,33		
TOTAL	Ļ	30	•								*	46
TEM NUMBER 2	4			COEFF	ICIENTS	OF CORRE	LATION		ME	;ans	•	
. 0PTIO	N HT	e N	P	/PB-ST	P8-TT	B-ST	8=77		ST	TY		95 99
	0 0	` 17	56.7 /	.,25	m, 19	-,32	-0,24		14,41	51.65		00
C		6		C .45	.41	64	,58	C	21,17	64,17		77
	2 0	7	23.3	.,13	-,16	≠ ,18	• . 22		14,29	50,14	. +	78
TOTA		30	•		1							A ALL

TEST NO 1 ACHIEVEMENT MONITORING 84

SUBTEST 5 SUBTRACTION ALGORITHM

TV ·		•										
ITEM NUMBER 1	. *		,	٠,	COEFFI	CIENTS O	F CORRE	ATION	,	ME	ANS	ITTM DESCRIPTIONS
OPTION	WT	, N	, p		PB#ST	P8-TT	B≠ST	Bett		ST	TT	
0.	4 0	0	,0		.00	.00	,00	.00		.00	• 00	<i>(</i> 01)
· (C)	1	25	, p1	1	20	25	,29	.36	C	6,04	55,20	44
5	Ŏ	- 5	1,		~.20	-,25	-,30	.37		4.40	46.80	-/^
TOTAL	•	30			,	- \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	•	•••				60
· ^,												
ITEM NUMBER 2		•			COEFFI	CIENTS .	F CORRE	ATION		ME	ANS	
. OPTION	NT	,N	; P		PB=ST	PB-TT	B=ST	B+TT	•	ST	TT	
.0	ū	0	•0		00	•00	.00	.00		.00	,00	78
c j.	1		90.0	Ĉ	.41	, 35	,67	.56	C	6,19	55,26	/11
. 2	0	3 27	10.0	•	41	35	-,70	- 59	-	2,00	40,67	- 64
TÔTAL	Ť	/ 30	••••		• • •	,	• • •	•		- • • •		
4	1							•			,	
ITEM NUMBER 3	,				COEFFI	CIENTS C	F CORRE	LATION		ME	ANS	
OPTION	` WT	. N	Р		PB+ST	P8=T1	B=ST	B=TT		ST	TT	
												110
0	0	0	, 0		100	.00	.00	,00		.00	.00	T0
Ci	1	23	76,7	C	.37	,35	.51	,47	C	6,39	56,22	- 21
ż	0	7	23,3		37	. ,35	• 51	48		3,71	45.86	
TOTAL		30		•	-,,,	* 400		• • •			, - • - •	
		•										
TEM NUMBER 4					COEFF	CTENTS (OF CORRE	LATION		y Mg	:ANS	
OPTION	WT	N	Р		00-67	PB+TT	B ⇔ \$T	Batt		ST	TT	•
. OPIIUN	W I	N			PD=31	PDVII	0#31	P+11		,	11	/ 211
0	0	1	3,3		0.17	-,13	41	31		3.00	45.00	634
C 1	1	26	86.7	C	,45	.40		. ,61		6,31	55,77	 523
·	Ō	3	10.0	•	41	-,37	70	·n,64		2.00	39,67	
TOTAL	۳,	30					•	:			•	
, verng									·	•		
ITEM NUMBER 5		,			COEFFI	CIENTS (OF CORRE	LATION		Me	ENA	
					•						·	
OPTION	HT	Ŋ	P		PB=ST	PS+TT	B.ST	8-17	*	5 Y	T ?	582
		•			_ 10	nn	n. 70	•,52		1,00	39.00	
0	0	1	3,3	:^	# ₁ 29	-,22	₩.70 22		ė	6,44	56.50	- 232
C 1	1	25	83.3	Ü	.49	, 49	.72	.72 •,67	v	2,75	40,00	Chipd-Stringer
2	0	4	13,3		-,39	-, 43	-,61	-101		E 13	70100	
TOTAL		30			•							

JERTAP 2.0					SUMMA	RY ITEM	STATIST	CS				F	AGE 38
TEST NO 1 AC	HIEAEKEN.	T MONITOR	ING 8W					SUBTES'	T 6	SUBTRAC	CTION ALGO	RITHM	·2 . 2
A REGMUN METI					COEFFI	CIENTS O	F CORREL	_ATION		ME	ZNA		,
OPTION		N	ρ		PB=ST	PB=TT	8#ST	B=TT		ST	77	*	
	_	,	3,3		-, 29	-,22	-,70	•,52		1.00	39,00	000	
U	. 0	1		^			.54	,66	C.	6,43	57,17	<u> , 998</u>	
v C 1	1,	23	76,7	Ç	.40	.48	-,41	-,50	,	4.00	43,33	4 .	
5		6	20,0		-,29	-,41	-1-1	-(,,,		*177	*,**	- 676	•
YOTAL		30										*Quinterior Table	
		16						LATTAN		ME	ANS		
ITEM NUMBER 7					COEFFI	CIENTS (IF CORRE	FAITON		""			
OPTION	; WT	N	P		PB-ST	PB-TT	8-51	B=T7		ST	ŤŢ	10	1
							. 16	,08		4.00	56,00	65	
0	. 0	1	3.3		-,11	,03	u, 26		•	9.50	67.00	- U	e e
C 1	1	6	20.0	Ç	.61	.52	.87	,74	Ç		50,26	(
2	. 0	23	76.7		53	-,51	. ,73	-,70		4,87	20120	,	
TOTAL	•	30											
\										.	• NIC		
ITEM NUMBER A	ı				COEFF	CIENTS	OF CORRE	LATION		ME	ANS		
Z OPTION	YN (N	P		P8-ST	P8-TT	B₩ST	B=TT		ST	11	95	
<u></u>		_			۸۵	1.0	08	.17		5,33	57.67	- 7	*
Ç) 0	3	10.0	_	-, 05	,10		,88	c	12,33	73.33		
C 1	1	3	10.0	C	,72	,51	1,23		٠	5,00	50,87		
ä	2 0	24	80.0		50	-,46	-,71	-,65		3100	20101		
TOTAL	•	30	1									•	•
							A. AADD	O ATTON		ME	;ANS		
ITEM NUMBER	7				COEFF	ICIENTS	UP CURKE	CHITON		,	, #(17)	, , ,	
027101	, WT	N	P		PB-ST	P8-T7	B-ST	8-11		ST	*1	- 0	,
							~, 05	.21		5,50	58.00	_ 0	
() C	4	13.3		-,03				ŕ		72,00		
C	1 1	3	10.0	Ç	,72		1,23	.82	Ų	12,33	50.70		
	2 0	23	76,7		o,48	-,44	-,66	-161		4,96	20110		
TOTAL		30											
									i	. Me	- ANS		
ITEM NUMBER 1	n 🔨				COEFF	ICIENTS	OF CORRE	FRATION		me		.	•
OPTIO	N WY	N	P		PB=\$T	PB-11	8-61	B⇒TT		ST	11	31	
					45		-,08	.17		5,33	57,67	- 15	374
373	o (C	3	10.0		. ,05					19,00	83,00	-	Jil
310 c	1. 1.	1	3.3	Ç	, 81		1,95			5,31	52,23		
	2 0	26	86,7		-, 38	-,32	-,59	-, 48		2121	-6150		
ATOT	L	30		Δ									ï
										45			

TEST NO 1 ACHIEVENINT MONITORING BW

SUBTEST 6 SUBTRACTION ALGCRITHE

•											
					ATELITE A	E ANDDEL	ATION		ME	INS Y	<i>;</i>
ITEM NUMBER 11				COEFFI	CIENTS 0	r Commen	W 1 2 AII			r	•
OPTION	ψT	N .	P	PB=\$1	₽₿⇔TT	8-51	B, TT		ST	ŢŢ	,
	,	3 '	10.0	a, 05	.10	- ,08	.17		£ .5,33	57.67	77
0	. 0	J	10.0			1,95	1,04	Ċ	19.00 -	83.00	, []
C 1	1	1	3,3 C	.81	. 43	# ₁ 59	48	٧	5,31	52,25	- 29
2	Q	25	86.7	-,38	-,32	, n 13.	-140		0124	14,74	- La - 1
TOTAL		30				`,					
			, 4								\
	•		1,1				A T 7 O M		ME	ANS	•
ITEM NUMBER 12			۴.	COEFFI	CIENTS 0	IL CORRET	AILUN		m <u>r</u>	Hisa	
* (Lin) () () () ()			•	•		- '	A		67	TT	ö
OPTION	WT	N .	٦	PB-ST	F8-TT	®-ST	9-77		ST,	''	w A
		,	•			_			5,25	54.75	72
0	0	4	13,3.	07	03, ړ	-,10	.05				
C 1	i	3	10.0 C	.72	,48	1.23	.82	C	12.33	72.00	- 63
5	å	23	76.7	-,46	-,36	-,63	•,50		B,00	51,26	FAIRES IN
•	V	30 .	1 + 4 1	•	•						
TOTAL		30									•
		,				•					
				coEFF:	ICIENTS (OF CORRE	ATION		HE	ens :	
ITEM NUMBER 13				ÇUMI I							
	ο ≠	N	p	P8=ST	PB+TT.	B=ST	B-TT		\$T	TT: ,	11.50
. OPTION	WT	l* 	r	10-01	10-11,	,					453
				-,19	-,02	-,31	·· ,04		4,25	53.00	215
0	0	. 4	13.3			1.95	1,04	Ĉ	17,00	83,00	- 213
Cl	1	1	3,3 C		,43		•,27	•	5,48	52,76	
Ź	0	25	85,3	o12]	F,18	-,31	-161				
TOTAL	ţ.	30			1				•		.*
				-		14					
						A AADDE	LATION		MF	ANS	
ITEM NUMBER 14				COEFF	ICIENTS	טף נטהתב	PHITON		•		
1					=	2 67	B=TT		ST	. 11	450
OPTION	WT	n N	Р	PB⇔ST	PB=TT	8-57	0=11		Į,	••	**
		•				21	- 46		4,25	53.00	- 219
. 0	0	4	.13.3	-,19		-,31	04			83.00	
C 1	1	1	3,3 0	, 81		1,95	1,04	Ç	19.00		
, ž	ō	25	83.3	21	.18	-,31	•.27		5,48	52,76	
TOTAL	•	30								•	
IVIAL						•					
' -eeu villanet 10				COEFF	ICIENTS	OF CORRE	LATION		M	EANS	Ooul
ITEM NUMBER 15				-						9 "	994
OPTION	WT	N	P	PB-ST	P9-TT	B-ST	8-11		\$T	77	_ 22/
OPILON	"	''					,				- 330
	٨	. 7	23.3	-,29	-,25	-,41	~. 35		4,14	48.00	GALGATYKE
0	0	•	3,3			_	1,04	C	19.00	83.00	
C 1	1	1	73,3	• 0	67	06	.09		5,68	54,32	
2	Q	55	1313	-,0,	, 14'	• • •			U		
TOTAL		30									
									r		

TEST NO 1	AUNIS	E A C LICIA I	undf!åu	110 08	٠							CTION ALGO	•	230
ITEM NUMBER	16					COEFFI	CIENTS 0	F CORRE	LATION		ME	ans		,
001	ľON	WT .	ĸ	Р		. 28-57	P8-Y1	B-ST	5-11		S T	TT	•	
•	٥	0 .	6	20.0		-,15	~ ;06	-,22	. 08		4.03	52,33	• • • • • • • • • • • • • • • • • • •	•
	0 1	1	1	3,3	. C	.81	.43	1.35	1.04	C	19.00	83,00	146	•
	2	0	23	76.7		20	•.13	m, 27	*17	پ	6,43	52,91	~ KO∐ '	
70	OTAL 🌢		30								,			
STEM NUMBER	17		•			COÉFFI	CIENTS (F CORRE	LATION		ЗМ	ANS		
	ITON	WT	- N	p		Pn∈St	PS-77	β ≖S T	8-11	. ,	ST	TT		
QP I	104	71	, A	,		1.0	, , , , , , , , , , , , , , , , , , ,						Δ.)
	j	٥.	6	20.0		4,15	+.06	-,22			4,83	52,33	914	
	C i	ì	1	3,3	. Ç	,81	-	1.95	1,04	Ç	19.00	83.00	- ENA	
•	3	0	23	76.7		,,20	-,13	-,27	17		5,43	52,91	340.	***
. 10	UTAL		30					•				•		
ITUM NUMBER	1.2					COSFFI	CIENTS (F CORRE	LATION	٠	ME	ANS		
TICH NOMBER	10	,	•			•							, •	
, ' OP'	110N	WT	N	þ		93 45 7	FBott	B=ST	8-77		51	` TT	1.77	
		# %	8	26.7		20 دد	-,11	-,27	·#•15		4.75	51.50	611	
	0	1	. 0	.0	Ċ	•00		.00	.00	C	,00	.00	- 393	
	C l	0	55	73,3		.20	.11	.27	.15		6.14	54.64	***************************************	
T :	OTAL	٧	30	1012		¥2.	٧	·		j.			•	
, +	* 1 ~ M													,
		r	,			AA282	CIENTS	ne corre	LATION		: ME	ANS		•
[IM NUMBER	19					CUEFF	TOTEMIA .	V1 00	Wm 1 6 9 / 1					
90	TION	WT	N	Р		P8=\$T	. PB=TT	B≠ST	Bell		ST	TT	428	` ,
,	_	A	۵	30.0		-,21	-,15	-, 28	20		4.78	50,89	- 289	
	. 3	ġ 1	; 9		Ô	,81	.43	1,95	1.04	Ç	19.00	83,00	Stra b√ (Matematyquyaa	
1	Cl	0	. 50	3.3 46.7	v	w.10	a'05	-,13	-, 02	•	5,55	53,65		
	. 2 OTAL	V	30	₩ ₩ [-146	,,,	,		•	_		
1	O I NE		30							•			\mathcal{A}	
			•	•		ANFER	ICIENTS	O# CORRE	LATION		ME	ANS)	
ITEM NUMBER	50					١.		or comit				•	1661	1
, 0 5	TION	W٢	N	P		PB+ST	PB+TT	B⇔ST	Butt		ST	17	V/_ III0 .	
•	• • •	•	ور					_			.		- 462	A 344 P
	9	Ç	Γ_{i}	36.7		⇒.10	- 04	-,13	• 05		5,36	53.16	State of the last	378
1 '	0 1	1	7	3,3	¢	.81	,43	1,95	1,04	C	19.00	83.00		′
1	ž	• •	18	60.0		-,20	-,12	o, 25	-,15		5,28	52,56		
	QTAL		30				\							•

LE. "AP 2.0 SUBTRACTION ALGORITHM SUBTEST 6 TEST NO 1 ACHIEVEMENT MONITORING 8W 1 MEANS COEFFICIENTS OF CORRELATION ITEM NUMBER 21 ' 77 ST 8-ST B-TT PB-ST PB-TT N OPTION 685 55,67 , 25 6.50 .15 .12 . .50 40.0 15 ,00 .00 C .00 .00 .00 •00 .0 C Cl 5,28 . 52,56 -,20 -,12 -,25 e,15 60.0 18 30 TOTAL COEFFICIENTS OF CORRELATION MEANS ITEM NUMBER 22 TT B-TT ST PB-ST PB-TT B-ST WT OPTION 54,15 620 , 25 6,46 ,03 50. .20 43.3 13 .00 .00 .00 2.00 C .00 .0 C .00 0 C 1 53.53 5,24 -.03 -,25 m.20 -.03 56,7 17 30 TOTAL MEANS . COEFFICIENTS OF CORRELATION ITEM NUMBER 23 ST TT BeT? PB-ST PB-TT OPTION 701. 6,37 54,06 ,03 ,27 .02 . ,21 53.3 16 ŋ .00 .00 .00 .00 ,00 C -,00 ,0 C 1 0 **C** 1 53,50 5,07 -,27 ·=,03 -,21 -.02 46.7) 2 14 30 TOTAL COEFFICIENTS OF CORRELATION MEANS ITEM NUMBER ST TT B-ST BeTT PB-ST PB-TT OPTION 6,22 53,63 .00 .23 ,00 . 18

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Appendix C

PERFORMANCE BY OBJECTIVE

FOR THE TWO SCHOOLS AND SIX CLASSES

NOTE: For those objectives for which there are three items, the number of subjects represented in the proportion correct at a particular test time is ascertained simply by summing the N's for the three forms; however, when there are more or less than three items, the N is increased or decreased proportionately.



Table

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

School 1

escription of Objectives		Objective		7	,	Composite Objective
Social person of objectives		Administra	tion Time			Administration Time
	Number of Items	A-1	A-2		Number of Items	A-1 A-2
lumerousness writes 0-99 represents 0-99	პ 3	8 v. 8 85. 6		, ,	6'	33.7 91.1
Ordering, Place Value ordering 0-99 notation 0-99	3) 14. 5	17.4 21.0		6	o5 49.2
Problem-Solving (Set A) subt-simple separating add-part part whole subt-comparison	2 2 2 2	57.5 56.7 56.7			•	·
11-15 0-99	³ 3 3	61.3 51.6	f 5.5 53.2		. 6	26.4 69.4
Problem-Solving (Set B) subt-join-addend add-simple joining subt-part part whole-addend	2 2 2	88,3 82.5 61.2			:) ·
11-15 0-99 382	3	83.9 53.0	\$4.7 58.1 0		6	383

May + (51.2)

Description of Objectives	•	Object	ive			Composite	e Objecti
	,	Admin!	Istration Time	>	1	Administ	ration Tie
	Number of Items	^ A-	1 •A-2		Number of Items	A-1	236 A-2
Sentence-Writing (Set A)	,		,				<u></u>
subt-simple separating	2	92.1	7 93.2		,		
add-part part whole	2	72:				,	11
subt-comparison	2	79.5 53.5	5 46.2	•		• *	
. ,	\ ,		•				ĺ
		' 85.	5 37.1		•		•
11-15 0-99	3	62.	•		,		
V-99	3	•	ν σ ητ.	•	6	74.2	78.2
Sentence-Writing (Set B)			,		•		·
subt-join-addend	2	40.	c 34.2	•			j
add-simple joining	2	b 6r.					
subt-part part whole-addend	2	73.	_	d			
				c			•
11-15	3	٠٠٠)				• •	
0-99	3	64.	5 64,5	i 4	6	66.1	~ 48,9
Sentence-Writing (Free Response)		•	, ,	•	2		
add-simple joining	. ? ;	97.5	5 .95.1	,	û		*:
subt-simple separating	2 .	47.2 47.7	1 '	{ .		•	
subt-part part whole-addend	2	72.1		Par C ₃	1		
add-part part whole	2					,	.
subt-comparison /	2	97.6	5 36.6	•	•		
subt-join-addend	·27	43,	9 38.6	•	•		
0 A / A		,			•	· (•
Set A (as above)	6	78.2	,	,		• •	•
Set B (as above)	6	71.5	c 62.9	r	•		
11-15	6	72.5	4 71.8	•	d	•	
0-99	6			,	10	4m., ,	
<u></u>	V	71.8	65.3		12	74.6	68,6
noi					00%		
384	Í	P.			385		
·	:		•				

igh the problem types correspond to Set B, these free response problems have the same wording etc. as the interview. i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

Vila.	ti	ŗ		.7	1	ي.ري	2/
1772	ţ,	f	•	′'	ì	~ ∶.	・・・・・

escription of Objectives	•	. 0	bjective	(Composit	e Objec
e	Number	. A	dministra A-l	tion Time		Number	Administ	ration '
	of Items					of Items	· ·	
Algorithms addition algorithm subtraction algorithm	3	·.	48.4			6	45.2	59.7
Algorithms (Free Response) (Timed To 2-digit addition algorithm 3-digit addition algorithm 3 addends	est) 27 36 9	2	48.4 34.5 4.3	94.9 50.0 15.1	•	72	36.0	55.0
2-digit subtraction algorithm 3-digit subtraction algorithm	27 45		30./ 15.2	29.8 14.0:	•	72	JC. 8	19.9
Recall of Basic Facts (Speeded Test)			. ;			26	75,7	15,7
add 0-20 subt 0-20	•		, ,			36 36	58.3	
	, .	ì		•		•		

Administration Time

A-1 A-2

Form U N = 19 23 .

Form V N = 22 2/

Form W N = 21 18

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PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

Achool 3

					<u> </u>
escription of Objective		•	Cbjective		Composite Objective
The second secon			Administration Time	*	Administration Time
	· .•	Number of Items	A-1 A-2	Number of Items	A-1 A-2
umerousness writes 0-99 represents 0-99		3 3		6	· 93.8 · 92.4
				&	
rdering, Place Value ordering 0-99 notation 0-99	• •	3 3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6	59.4 , 65.2
*	•			•	·
roblem-Solving (Set A) ' subt-simple separating add-part part whole subt-comparison		2 2 2 2	60.0 90.7 00.3 100.0	.v Æq	
11-15 0-99	\$ \$ **********************************	3 3	90,4 470, 43.8 70.6	6,	27.2 85.3
roblem-Solving (Set B) subt-join-addend add-simple joining subt-part part whole-adde	nd į	2 2 2	45.5 85.7 86.4 82.6 66.0 50.0		
11-15 0-99 388		3 '3	100.0 93.9 64.5 91.5	6	. 51.3 72.7 · 389

Description of Objectives	b1	Objective .		Composite Objecti
		Administration Time		Administration Ti
` \	Number of Items	Λ-1 Λ-2	Number of Items	A-1 A-2
Sentence-Writing (Set A)				,
subt-simple separating	2	O' E O' 1		•
add-part part whole	2	95.5 95.2 100.0 100.0	,	e e
subt-comparison	2	70.0 65.2	•	1.
1	•	1000	•	
		· \		,
11-15	1	93.8 . 93.5		
0-99	3	84.4 81.8	6	89.1 87.9
	, , , , , , , , , , , , , , , , , , ,			- second
Sentence-Writing (Set B)	,			
subt-join-addend	2	54.1 60.8	٠	
add-simple joining	2	100.0 100.0	•	
subt-part part whole-addend	. 2	17.3 81.0		· · · · · · · · · · · · · · · · · · ·
		:	•	V
11–15	3	18.1 18.8		
0-99 ,	3	18.1 51.5	6 .	18.1 80.3
		•		•
Se ntence-Writing (Free Response)	₩ (In	Δ. Δ		· • · · · · · · · · · · · · · · · · · ·
add-simple joining	· 20 2	90.9 100.0		V .
subt-simple separating	2	100.0 100.0		
subt-part part whole-addend.	2 ,	95.0 81.8		• • • • • • • • • • • • • • • • • • • •
add-part part whole	2	100:0 95.2		
subt-comparison	2	54.6 13.9		
subt-join-addend	2	, 72.7 66.7		., .
* * * * * * * * * * * * * * * * * * *		00.11		, t
Set A' (as above)	6	84.4 89.4		,
Set B (as above)	6	86.0 83.3		•
11 12 1 1		89.1 86.4		
11-15 n-00	5 , .	,		
0-99	6	81.3 86.4	12	\$ 85,2 86.4
	•	l ,	•	
	e ★	•		', ' Ν ω

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ERIC ugh the problem types correspond to Set B, these free response problems have the same wording etc. as the intervi

escription of Objectives		Objective	•	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	` Composite Object:
	Number of Items	Administration Time A-1 A-2		Number of Items	Administration T
Algorithms addition algorithm subtraction algorithm	3 3	50.0 93.7 43.8 39.4	X	6	46.9 66.7
Algorithms (Free Response) (Timed 1 2-digit addition algorithm 3-digit addition algorithm 3-addends	27 36 9	54.5 83.1 30.5 57.6 31.3 45.3	0	72	36.1 65.3
2-digit subtraction algorithm 3-digit subtraction algorithm	27 45	41.3 db.4. 16.5 13.8		72	25.8 25.4
Recall of Basic Facts (Speeded Test) add 0-20 subt 0-20		· // / / / / / / / / / / / / / / / / /	i i	36 36	87.5 90.2 95.3 76.3

Administration Time

•		χ.	A-1	A-2
Form U	Ŋ. =	•	12	- //
Form V	Ŋ =		10	ļÇ
Form W	М́ =	. 1	10	12

PROCRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

	•			K,
Description of Objectives	, A	Objective	•	Composite Objecti
	Number of Items	Administration Time	Number of Items	Administration Ti
Numerousness writes 0-99 represents 0-99	3 3,	45.2 + 100.0	T.	95.2 100,0
Ordering, Place Value ordering 0-99 notation 0-99	3	8 6.74 90:00 14.3 15.	6	50.0 52.5
Problem-Solving (Set A) subt-simple separating add-part part whole subt-comparison	2 2 2	61.5 1.5 73.3 100.0 71.4 80.0		
11-15 0-99	3	51.0° 45.0 57.1 65.0	6	69.1 80.0
Problem-Solving (Set B) subt-join-addend add-simple joining subt-part part whole-addend	2 2 2	71,4 73.0 92.3 100.0 60.0 58.5		
11-15 0-99 ERIC	3°	9515 95.0 57.7 , 60.0	3	73.8 17.5 95

	Number of Items	Administration Time A-1 A-2	Number of Items	Administration T
	•			Λ_1 Λ_2 N
	*			N-1 N-2 P
Sentence-Writing (Set A)				
subt-simple separating	9 .	700.0 93.5		•
add-part part whole	2	76.9 100.0:		
subt-comparison	2	80.0 83.3	•	•
		80,0 (5,0)		•
1	•	95.2 160.0	•	
11-15	3			
0-99	3	76.2 85.0	6	35.7 92.5
Sentence-Writing (Set B)	•		•	
subt-join-addend	3	61.5: 61.5	•	
add-simple joining	2	/o+ . /onlo		•
subt-part part whole-addend	2	78.6. 80.0	7	
				·
11-15	3	45.11 8.12 ·	•	
0-,99	- 3	76.2 80.0	6	21.0 85.0
Sentence-Writing (Free Response)			· .	
add-simple joining	•	100.0 - 100.0		•
subt-simple separating	2	100.0 1111	•	
subt-part part whole-addend	$\overline{2}$	80.0 75.0	•	
add-part part whole	2	100,0 10,0	,	
subt-comparison	2	58.9 61.5		•
Bubt-join-addend	2	57.7 60.0		
Set A (as above),	•	orn con		•
Set—B (as above) ¹	6	85.7 55.0		•
{		78.6 77.5		
11-15	6	85.1 80.0 .	•	
or 0−99	6	78.0 52.5	12	82./ 81.3
		1014 S		· Ong
ეცე			•	
396		•	A .	Ph. SM
	e de la companya de l		3	97

ERICugh the problem types correspond to Set B, these free response problems have the same wording etc. as the intervii.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

Class 1.

Object	ive		Composite	Object
				
•	stration Time 1 A-2	Number of Items	Administra A-1	
)	· •	6	50,0	81,5
6 48	3.0 67.1	72.	50.4	69.6
E	•	72	25.0	27,1
		36 36	87.9 71.0	91.7 78.8
	nber Items A- 3 3 4 6 9 4 7	nber Items 57./ /67.6 42.9 65.0 7 66.7 87.8 48.0 67./ 9 41./ 25.0	Number Items A-1 A-2 Number of Items 3 57./ /66.6 3 42.9 65.0 6 7 66.7 87.8 6 48.0 67.1 9 11.1 25.0 72 7 76.5 42.2 7 72.	Therefore A-1 A-2 Number A-1

Administration Time

			A−ĭ .	'A-2
Form U	N =		6	8
Forfi y	N =		8	7
Form W	N =	•	7.	5

PROGRESS TOWARD OBJECTIVES, ACROSS ADMINISTRATION TIMES AS REPRESENTED - , BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

0			h.		24.
Description of Objectives		Objective		4	Composite Objectiv
		Administra	ition Time	,	Administration Tir
	Number of Items	A-1	A-2 '	Number of Items	A-1 A-2
Numerousness		8	a		,,
writes 0-99	3	70.7	96.7		
represents 0-99	3	190.3	94.9	6	84,6 12.1
	•	•			
Ordering, Place Value	•	· · · · · · · · · · · · · · · · · · ·			/ ³¹
ordering 0-99	3	69.2	64.3	1	,
notation 0-99 '	3	15.4	21.4	6	-2.5 40.9
	• • • • • • • • • • • • • • • • • • •				9
Problem-Solving (Set A)				· · · · ·	
subt-simple separating	. 2	<i>57.</i> /	•		
add-part part whole subt-comparison	2 2	60:0 44,4	77.8 70.0	•	
11-15	3	. <i>53.9</i>	85.1	٠	
0-99	3	52.7	57.7	6	53.7 764
	•	2	* .	e	•
Problem-Solving (Set B)			,		t
subt-join-addend	2	50.6	,90.C		•
add-simple joining	2	71.4	77.8		•
subt-part part whole-addend	۷ .	م.دو	ं जंजा जे		
11-15	3	76.7	78.6		
400	3	46.2	50.0	6	61.5 64.3
		%	•	.	101
EDIC.			•		· ·

	***************************************	the first fill	•	1
Description of Objectives	• 1	Objective .		Composite Objectiv
	Number	Administration Time	ML.	Administration Tir
	of Items	A-1 A-2	Number of Items	A-1 A-2
Company Huddeling (Can A)		1.		ę
Sentence-Writing (Set A) subt-simple separating	9	£88.9 9010		
add-part part whole	2 `	V 85.7 88.9	1	
subt-comparison	2	40.0 33.3	• •	•
	_	TUND NOID		· · · · · · · · · · · · · · · · · · ·
	1	**************************************		v ·
11-15	. \ 3	76.9. 72.1	•	, m, H
0-99 ,	3	61.5 50.0	6	69.2 71.4
Sentence-Writing (Set B)	,	41		•
subt-join-addend	2	. 28.6 33.3		
add-simple joining	2	90.0 66.7	4.	
subt-part part whole-addend	2	66.7 30,0	\	
11-15				,
0-99	j	69.2. 35.4	,	
	, 3	61.5 50.0	0	65.4 42.9
Sentence-Writing (Free Response)	•	ne .		
add-simple joining	2,	100.0 58.9	•	
subt-simple separating	2	100.0, 100.0		
<pre>subt-part part whole-addend add-part part whole</pre>	2 '	80,0 44.4		•
subt-comparison	. 2	100.0 100,0	•	
subt-join-addend	2	14.3	14 15	
	•	33.3	,	£.
Set A (as above)	6	76.9 75.0		<u>(, , , , , , , , , , , , , , , , , , , </u>
Set B (as above)	6	69.2 42.9	•	
11-15	,	•		
0-99	b 6	73.1. 64.3	40	712 / 50'0
	0	73.) 53.6	. 12	73./ 58.9
				N
400				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
402	•	1		403/

ERIC ugh the problem types correspond to Set B, these free response problems have the same wording etc. as the intervi-

Description of Objectives	J		Objective			1	Composite Ol	jective
	Number of Items	,	Administra A-1	ation Time	**************************************	Number of Items	Administrati A-1 A	ion Time
Algorithms addition algorithm subtraction algorithm	3		46.2 46.2	64.3 7.1	, ,	·6	46.2 3	<i>5.</i> 7
Algorithms (Free Response) (Timed 2-digit addition algorithm . 3-digit addition algorithm 3 addends	Test) 27 36 9	•	(36.8 16.7	67.5 28.6 4.8		 72	હેલે./ 4	40.2
2-digit subtraction algorithm 3-digit subtraction algorithm	27°.		·	23,8 , 10.0		72	ر العامل المادر ا	15.2
Recall of Basic Facts (Speeded Test) add 0-20 subt 0-20		*		,		36 36	, , , , , , , , , , , , , , , , , , , ,	:.5 51.8

Admini	stration	Time

		** *	44 -
Form U	N =	<i>.</i>	5
Form V	N =	6	سرير
Form W	N =	4	4

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Full Test Provided by ERIC

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

	, , , , , , , , , , , , , , , , , , ,				
Description of Objectives		Objective			Composite Objecti
		Administration Time			Administration Ti
•	Number of Items	A-1 A-2		umber Items	A-1 A-2
Numerousness writes 0-99 represents 0-99	3 3	88.2 8J.4 100.0 100.0		6	94,1 91.2
	r de la companya de	. 1	я	'V '	#"
Ordering, Place Value ordering 0-99	7	88.2 44.1	•	:	
notation 0-99	3	11.8 17.7		. 6	50.0 55.9
			1.	ş.	
Problem-Solving (Set A) subt-simple separating add-part part whole subt-comparison	2 2 2 2	63.6 58.3 63.6 90.9 66.7 100.0		3	
11 - 15	3	88.2 /00.0		•	
0-99	3	41,2 64.7	•	6	64,7 82.4
,	•	1			
Problem-Solving (Set B) subt-join-addend	2	100.0 81.8			,
add-simple joining subt-part part whole-addend	2 2	70.9 75.0 54.6 45.5		,	N.
,11-15 0-99	3 3	100.0 88.2		6	82.4-67.7
406		• 7		•	407

	·				في يا دام بياً			·	
Description of Objectives	14,	· ·	· · · · · · · · · · · · · · · · · · ·	Objective	e	/	•	Compositi	e Objecti
•		, MLan		Administ	ration Time	2	· · · · · · · · · · · · · · · · · · ·	Administr	ation Ti
		Number of Items		A-1	A-2	-	Number of Items	, A-1	
Sentence-Writing (Set A) subt-simple separating add-part part whole subt-comparison		2 2 2			90.9 100.0 54.6			1	
11-15 0-99	**	3 3			58.2 76.5	,	6 .	82.4	82,4
Sentence-Writing (Set B) subt-join-addend add-simple joining subt-part part whole-addend	. A.	2 2 2		, 36.4 100,0 58.3					•
11-15 0-99		3 3	,	58.8 70 .6		a. :	6	64.7	70.6
Sentence-Writing (Free Responsadd-simple joining subt-simple separating subt-part part whole-addendadd-part part whole subt-comparison subt-join-addend	. •	2 2 2 2 2 2 2	q S	70.9° 100.0 \ 90.9 100.0 18.2 ,50.0					
Set A (as above) Set B (as above)		. 6 6	• •	, 73.5 16.5	79.4,	, ,			
11-15 0-99		6		79,4 70,6	79.4 79.4	,	12	75.0	79.4
408	,	•			,,,,	· .		409	•

ERICugh the problem types correspond to Set B, these free response problems have the same wording etc. as the intervi; i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

escription of Objectives		Objective ·		Composite Object		
	Number of Items	Administration Time A-1 A-2	Number of Items	Administ A-1	tration T	
Algorithms addition algorithm subtraction algorithm	3 3	41.2 88.2 35.3 29.4	6	38.2	58.8	
Algorithms (Free Response) (Timed 2-digit addition algorithm 3-digit addition algorithm 3 addends	Test) 27 36	45.8 83.1 २२.१ 50.0 ० २१.५	72	28.2	59./	
2-digit subtraction algorithm 3-digit subtraction algorithm	27 45	34.6 28.8 11.0 15.7	72	19,9	20.6	
Recall of Basic Facts (Speeded Test) add 0-20 subt 0-20			36 36	83.3 69./	84.8 70./	

Administration Time

			A-1	∧ A-2
Form U	N	n n	6	6
Form V	N	1	6	5
Form W	N	53	5	6

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

· '					· • • • • • • • • • • • • • • • • • • •
		1.000	;		250
escription of Objectives		Objective			Composite Objecti
	V	Administration Ti	l /	**	Administration Ti
,	- Number of · Items	A-1 A-2	. / :	mber Items	A-1 A-2 Ć
	9) · · · · · · · · · · · · · · · · · · ·
umerousness writes 0-99		100.0 60.7	i u u u u u u u u u u u u u u u u u u u	· ·	
represents 0-99	3	71.4	;	3	85.7 72.2
	,				
rdering, Place Value			4		·
ordering 0-99	3	100.0 85.9			
notation 0-99	3	14.3 33.	ÿ (á	511.1 61.1
				\$ 100 miles	· ·
roblem-Solving (Set A)		50.0 23.			
subt-simple separating	2	50.0 33 25.0 66.	Ţ.	•	
add-part part whole subt-comparison	2 2	50.0	*		"· · · · · · · · · · · · · · · · · · ·
11-15	2	42.9 66.	7		
11-15 0-99	3	42.9) المراجع المراجع المراجع	5	42.9 50.0
				<i>,</i> 	•
Problem-Solving (Set B)			• •		
subt-join-addend	2	75.0 66			
add-simple joining	2	66.7 83		,	•
subt-part part whole-addend	2	25.0 66	••/		
11-15	3	85.7 77	, ž	• • • • • • • • • • • • • • • • • • •	•
0-99	3	28.6 . 60	6.7	5	113 ^{57.} / 72.2
41.0				.	110

Description of Objectives		Objective					Composite	Objecti-
	WL	Administra	tion Time		· · ·		Administr	ation Ti
	Number of Items	Λ-1	A-2 6		Number of Items		. A-1	A-2
Sentence-Writing (Set A)	,					·	\	
subt-simple separating	2	50.0	83.3		•			
add-part part whole	2	83.3	100,0				•	
subt-comparison	. 2	25.0	C '			•		
u			ا التيم العمل معن	•			. \$,
11-15	3	71.4	55.6.				,=- (r) . I	
0-99 '	3	42.9	66.7		6		57.1	61.1
Sentence-Writing (Set B)					•		,	
subt-foin-addend	2	33.3	0			• ,		
add-simple joining	2	. 25,0	66.7.				٠	,
subt-part part whole-addend	2	0	50.0	•				-/
11-15	.3	28,6	3 3.3		•		•	
0-99	3	14.3	44,4		6	•	21.4	38.9
Sentence-Writing (Free Response)	•			•			,	
add-simple joining	2 2	. 83.3	100.0				•	
subt-simple separating	2 7	. 75,0	66.7					
subt-part part whole-addend	2	25.0	33.3	· //	7.0 7		µ • .m	
add-part part whole	2	. 100,0	100.0		r i k.			4
Bubt-comparison	2	. 0	0 50.0		•		ı	
subt-join∸addend	2	. 0	50.0	•	. •			
Set A (as above),	6 .	50.0	55.6				x	
Set B (as above)	. 6	42.9	61.1		3		•	
11-15	6	50.0	61.1		. •			
/ 0-99	6				12		46.4	58,3
		42.9	55.6		,		F-W/4 F	Ciu
		1		.a. €				251
Δ14	•	• •		,	¥		415	

ERIC ugh the problem types correspond to Set B, these free response problems have the same wording etc. as the interview

escription of Objectives		Objective	Composite Object	
	Number of Items	Administration Time A-1 A-2	Number of Items	Administration T A-1 A-2 5
Algorithms addition algorithm subtraction algorithm	3 3	() 64.7	6	ق وي ري
Algorithms (Free Response) (Timed Te 2-digit addition algorithm 3-digit addition algorithm 3 addends	est) 27 36 9	13.1 13.7 0 0	72	14,3 da.a
2-digit subtraction algorithm 3-digit subtraction algorithm	27 45	17.5 17.3 7.6 5.2	72	11.5. 9.7
Recall of Basic Facts (Speeded Test) add 0-20 subt 0-20			36 36	46.4 50.9 35.1 40.7
-				and the second s

 γ^{\dagger}

Administration Time

A-1 A-2

Form V N =
Form W N =

417

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PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY POR:

						·	•		
escription of Objectives	i	. 1	Objective				۴.	Composite	Objectiv
7			Administr	ation Time				Administra	tion Tim
<u> </u>	Number of Items	,	. A-1	A-2	•	Number of Items		A-1	A-2
		'					1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1		
Numerousness	3	ì	100.0	100.0				^ 2 3	, ,, c
represents 0-99	3	•	86.7	87.5		. 6	. •	93.3	93.8
	•	ı		4		* *			
Ordering, Place Value	•	,	100.0	93,8	•			•	,
ordering 0-99 notation 0-99	3	·	46.0	56.3		6	•	70,0	75.0
			·	.		4		•	. 1
Problem-Solving (Set A) subt-simple separating add-part part whole subt-comparison	2 2 2	· '	63.6 55.6 90.0	63.6 ' 40.9 } 100.0		4		•	,
112-15 0-99	3 3		93.3	93.E 75.0		6	<u> </u>	70.0	84.4
Dunkling Collection (Cont. P.)					•	•			
Problem-Solving (Set B) subt-join-addend add-simple joining	2 2	•	90,0 81,8	90.0 90.9					
subt-part part whole-addend	2.		66.7	54.6	•		,		253
11–15 0–99	3	٠	100.0 60.0	100,0 56,3		6	•	80.0	18.1
ERIC 418	e e e e e e e e e e e e e e e e e e e	. •	, , , , , , , , , , , , , , , , , , ,					119	

Description of Objectives		,	0bject	ive		1	· . ·	Composit	e Objecti	
	Administration Time				}			Administration Ti		
· ·	Numb of It		A-1	1 A-2	1	Number of Items		. A-1	A-2 ² 5	
Sentence-Writing (Set A)	s •				1			:	í	
'subt-simple separating	2	•	100.			•		•		
add-part part whole	. 2		1001	•			,	,	,	
subt-comparison .	. 2		88.	9 81.8			•) '		
	•		93.	g /r.o			4			
11-15	3		1200		1				•	
0-99	3	•	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	C. UM.		6		16:1	93.8	
Sentence-Writing (Set B)	. ,	,				•				
subt-join-addend	2		81.8	81,8		•	• .			
add-simple joining	2	e ,	10000	/ot.(•	
subt-part part whole-addend,	. 2	, +	/₽?. C							
11-15	. 3		166.16		/		,	ر .		
0-99	3		56.7	_	, ,	. 6	γ	93.3	90,6	
Sentence-Writing (Free Response)	• ,		r			•	•			
add-simple joining	2		90.9				•			
subt-simple separating	2		· 100.0	90.7		• •	•	•		
A subt-part part whole-addend add-part part whole	2		100.6							
subt-comparison	2		20.9			•	•			
subt-join-addend	, 2		150.0		r				•	
Sat A (an abana)			•			•				
Set A (as above) Set B (as above)			76.7					• •		
occ. a (ab above)	• 0		76.7	, ,	ţ	•				
11-15'	6	<i>:</i>	ico,	C 93.	8 ,			e.		
0-99	6		93.	d 93.	8	12		96.7	93,8	
ų			· · · · · · · · · · · · · · · · · · ·		•			•		
en.		•					•			
y 4 20								421		

ERICugh the problem types correspond to Set B, these free response problems have the same wording etc. as the interviewell, i.e., the Sentence-Witing Set B items above have alternative wording, number order, etc.

(Continued) Class 5 Table

escription of Objectives		Objective			-Composite Objec			
,	Number of Items	Administra A-1	tion Time		Number of Items	Administration T		
Algorithms addition algorithm subtraction algorithm	3 3	60.0 53,8	/ec. 6 50.0		6	56.7 750		
Algorithms (Free Response) (Timed 2-digit addition algorithm 3-digit addition algorithm 3 addends	Test) 27 36 9	64.4 45.0 6.7	94.4 65.6 29.2	•	72	45.0 71.9		
2-digit subtraction algorithm 3-digit subtraction algorithm	27 45	48.9 22.1	44.4	9	72	32.5 30.5		
Recall of Basic Facts (Speeded Test) add 0-20 subt 0-20	•		,		36 36	92.2 95.8 82.2 82.8		

Administration Time

					5/ - T	A-2
Form	U	N			6	5
Form	V	N	=		.4	5
Form	W	N	-	,	5	6

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

	•			4			256		
escription of Objectives		Objective			Composite	Composite Objective			
			Administra	tion Time		Administr	Administration Time		
•		Number of Items	A-1	A-2	Number of Items	A-1	A-2		
umerousness writes 0-99 represents 0-99		3 3	66,7 76,2		6	71,4	29.5		
rdering, Place Value ordering 0-99 notation 0-99		3 3	95.2 14.3		6	54,7	44.7		
relem-Solving (Set A) Subt-simple separating add-part part whole subt-comparison		2 2 2	5%.1 42.9 60.0	53.9 91.7 53.9			Ì		
11-15 0-99 /		3	524 49.6		6	50.0	65.B		
roblem-Solving (Set B) subt-join-addend add-simple joining subt-part part whole-adde	end e	2 2 2 3	71.4 85.7 65.7 81.0	92.3 92.3 33.3 89.5					
0-99 - 424	л .	3	52.4	57.9	6	425	73.7		

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, , , , , , , , , , , , , , , , , , ,			·				
Description of Objectives		Objective	e '	+	, 	Composite	Objecti
2. 4.1		Administ	ration Time		•	Administra	ition Ti
	Number of Items	A-1	A-2		Number of Items	A-1	A-2 (
Sentence-Writing (Set A)				,			
subt-simple separating	2	100.0	/00.C	,		•	• [
add-part part whole	2	71.4	84.6		7 .		· !
subt-comparison	2 *	42.9	41.7	.•		.•	
		or n	84, 2 .			· ·	, •
11-15	3	85.7	•			- 1	, , ,
0-99	3	57.1	68.4	•	6	71.4	76.3
Sentence-Writing (Set B)		** /	22 /	,	·	•	
subt-join-addend	2	28.6	23.1	••	•	•	ĺ
add-simple joining	2	85.7	100.0			•	- 1
subt-part part whole-addend	2	92.9	53.9		.1.		s
11-15	3	66.7	47.4		•	•	ſ
0-99	3	71.4	68.4	,	6	69.1	57,9
Sentence-Writing (Free Response)		•					
add-simple joining	2	100.0	92.3		•	•	
subt-simple separating	2	100.0	83.3		•	•	
subt-part part whole-addend	2	71.4	58.3		a	•	•
add-part part whole	2	92.9	92.3		•		
subt-comparison	2	50.0	38.5	i			٠.
subt-join-addend	2	50,0	<i>38.5</i>	1	•	•	
Set A (as above),	6	. 81.0	711		•	•	1 .
Set B (as above)	· 6		71.1				
		73.8	63,2				
11-15	6	81,0	73.7	•	. · · · · · ·		, 1
0-99	6	73.8	60.5		12-	77.4	67.1
		,	•	٠		* * * * * * * * * * * * * * * * * * * *	257
				•			57
400							

426

427

ERIC ugh the problem types correspond to Set B, these free response problems have the same wording etc. as the interviitems; i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

escription of Objectives	7	Objective		₹		Composi	te Object
	Number of Items	Administra A-1		Number of Items	Adminis A-1	tration T	
Algorithms addition algorithm subtraction algorithm	3 3	44.6	84.2 47.4-		. 6	45.2	100 A
Algorithms (Free Response) (Timed 2-digit addition algorithm 3-digit addition algorithm 3 addends	Test) 27 36 9	46.6 39.3 1.6	83.0 64.9 19.3		72	37,5	06.3
2-digit subtraction algorithm 3-digit subtraction algorithm	27 45	29.1 14.3	26.9 16.8		72	/9.8	20% 10%
Recall of Basic Facts (Speeded Test) add 0-20 subt 0-20	4 (4.	· · · · · · · · · · · · · · · · · · ·	the wife and the second of	y ten e a la gravi	36. 36.	80.6	1627

Administration Time

A-2

A-1

766 . 7.* 7 7 Form U N = Form V N = Form W N =

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